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Los Angeles Board of Education

**COURSES  
OF STUDY**

*for the*

**Los Angeles City  
High and Inter-  
mediate Schools**

**1912-1913**

**I**

UNIV. OF  
CALIFORNIA

1912

**COMMERCIAL PRINTING HOUSE  
LOS ANGELES**

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1912

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1. Gardena High School
2. Hollywood High School
3. Los Angeles High School
4. Manual Arts High School
5. Polytechnic High School
6. San Pedro High School
7. Wilmington High School
8. Intermediate High Schools

## Introduction

The Los Angeles High School District comprises eight High Schools. Of these the four large ones—Los Angeles High, Polytechnic High, Manual Arts High and Evening High—are within the limits of the original city. The others, Hollywood High, San Pedro High, Gardena High and Wilmington High, were annexed. All of these schools offer courses leading to the University, and all are accredited.

The faculties employed and the work done in these different schools are equal in rank and merit. (Each has for its purpose the physical, mental and moral development of the child, and is more concerned with these than with his preparation for so-called higher academic work.) While they are the same in these broad fundamental lines, each has its own personality and distinguishing features.

The Los Angeles High School is the parent high school of the city, and is distinctively the academic, classical and cultural high school. It is the only high school in the system offering Greek. All but three of its courses lead directly to the University. (Much practical and applied work) such as strong courses in food chemistry, mechanical and architectural drawing, applied art, surveying, and commerce has been instituted.

The Polytechnic High School, while young in history, has had a phenomenal growth. It is the technical high school of the city. (All but three of its courses are highly specialized and aim to meet the needs of those who do not intend to go directly into college.) It offers strong courses in electricity, mechanical engineering, architectural drafting, assaying and commerce. As large a percentage of its graduates, however, as those of any other high school are entering higher institutions of learning. It offers all of the high school academic branches except Latin and Greek.

The Manual Arts High School, although but two years old, has attained remarkable success. It has already made for itself a place in our school system. It occupies a position somewhere between the classical high school and the technical high school, offering all of the academic branches except



Greek in addition to the industrial work which is presented somewhat from the educational or developmental standpoint.

The Hollywood High School is a distinctly cosmopolitan school, comprising all of the old and new features of high school work. One of its characteristic features is the prominence given to home economics, for which work it has ideal equipment.

The San Pedro High School is developing a course of marine biology and engineering to meet the needs of its environment.

The Gardena High School is building into one of the strongest agricultural high schools in the country. Located in a rural community with a good sized plot of ground, it is well situated for the work it is undertaking.)

As yet the Wilmington High School is small in enrollment, and is undertaking only the first two years of high school work. This is being well done, however, and as the community grows in population it will develop into one of the substantial high schools of the city.

Los Angeles is very fortunate in her high school facilities. In buildings, equipment and character of her faculties she is unsurpassed. For 1911-12 the high school enrollment aggregated 10,933. A pupil in this district has a choice of forty-three distinct, well organized high school courses of study.

# Rules and Regulations

## For the High and Intermediate Schools of the Los Angeles School District

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### 1. AIM

#### A. Value of:

The main purpose of the High Schools of Los Angeles City is twofold, viz.: First, to give boys and girls opportunity to fit themselves for the immediate duties of life through the development of their mental, moral and physical powers and their social natures, as manifested in a thorough English education. Secondly, to give those who desire to enter business immediately upon leaving the high school, or those who wish to enter their life-work through the avenues opened by the colleges, universities, technical schools and art institutes the largest possible assistance through courses of study and units of work especially arranged for them.

#### B. Aim of Pupils:

The desirability of a definite aim in either of these fields cannot be over-estimated. A course of study deliberately chosen after a student's careful consideration of his desires, tastes, tendencies and aims, and persistently pursued through a continuous period will be far more valuable than frequent change of courses. Changes from one course to another should not be made except for very grave reasons.

#### C. Aim of District:

In the nature of things school is a serious, though perhaps not unhappy, occupation. The whole purpose of the community in supporting the schools, employing teachers, providing buildings and equipment is to aid the pupils in every way it can to realize their better and larger selves. No other object is worthy, and the pupil who persistently neglects his school work will create the presumption that he is either pursuing the wrong course, or has no place in the school. For a student to sit in classes without participating in their work is a pretense at study which should be corrected by the student's withdrawal.

## 2. ENTRANCE REQUIREMENTS.

### A. Credentials:

All pupils under 21 years of age residing in the Los Angeles City High School District are entitled to attend the City High Schools, provided, (a) they have completed the eight years' work of the Public Elementary School; or (b) they have been students of regular State High Schools and Academies requiring such preparation, or (c) they come from private schools in this or other states, whose work is accredited by our State University or other State Universities or Colleges of similar rank, such as Brown, Cornell, Vassar, Smith, or who hold certificates from State Regents.

### B. Examination:

Students who do not possess one of the above credentials will be admitted to our High Schools only by examination, conducted by the faculty of the High School that the student desires to enter. In order properly to grade and assign students thus desiring admission, the examination will close not later than the Friday next preceding the opening of school both in September and February.

### C. Non-Residents:

According to the State Law of California, students living outside the Los Angeles City High School District may attend the schools thereof, (a) provided that **those living in other High School Districts** obtain permission from the trustees of such districts and also pay the tuition prescribed by the Board of Education of Los Angeles, and (b) pupils residing in such sections of the State as are not included in a High School District may attend any high school without tuition, provided it has adequate accommodations.

### D. Transfers:

Transfers from one high school to another in the Los Angeles City School District are to be signed by the Principal of the school from which the student is transferred, but no transfer will be granted, except in case of change of residence, after the first two weeks of the semester. Students who have failed during the previous semester either in scholarship or deportment will be transferred only by the Superintendent of Schools.

### 3. DEPARTMENT

#### A. Social Nature:

High school students have arrived at an age in which the demands of their social natures begin to take precedence over their individual selfish wants; hence they should know and practice the courtesies and proprieties of good society; they should grow in self-respect through respecting the rights of others; they must be honest with themselves and with others in word and in deed; their language should be framed with respect to those who hear it, be free from all vulgarity and other offensive forms. They should be clean and neat in person and clothing as indicative of the character within them. Since environment and the reaction of the deed on the doer are powerful factors in education, the students should take great pride and satisfaction in the cleanliness and good order of their surroundings.

#### B. Tobacco:

Since tobacco is generally regarded as injurious to growing students, and is at the same time highly offensive to many persons, its use is strictly forbidden on school premises or on the way to and from school.

#### C. Self Government:

Opportunity is given the students of the several high schools for actual practice in social self-control through self-government committees, composed of students who assist in governing school affairs, especially those outside of class and recitation rooms. Such committees also have the management, under the advice and approval of the faculty, of the various student activities, entertainments, etc., as well as the lunch rooms.

#### D. Secret Societies:

Secret Societies, Fraternities, or Sororities in the high schools of California are forbidden by State law. All meetings of school organizations are to be announced by notice on the Bulletin Board only after the Principal has given permission for such meeting, which shall be open to any and all students and teachers. All students on entering the high schools are required to sign a statement pledging their word of honor that they do not hold membership in any Secret Society, Fraternity or Sorority, and that they will not join or in any way associate themselves with any such organiza-

tion during the time they may be students in any of the Los Angeles high schools.

**E. Property:**

Property being an essential of life and education, students are held responsible for any damage to school property resulting from their negligence or carelessness. For the good of the school, any damage should be immediately reported to those in authority.

**F. Sale of Books:**

Students are instructed not to offer any books for sale to book-stores without securing written permission, signed by the Chairman of the Custodian Committee. To prevent the loss of books students are directed to write their names in all of their books in ink, and place private marks on certain pages.

**G. School Representatives:**

Students whose conduct has been such as to antagonize the welfare of the school, or whose work has been irregular and unsatisfactory will not be allowed to take part in any public contest or entertainment of any sort or be in any way connected with the management of the student affairs, or represent the school in any public capacity whatsoever. The main reason for this being that such students do not represent the school, and therefore should not be placed in the position of seeming to represent the school.

**H. Probation:**

A pupil in any of the high schools, who during three months of the school term, has failed to do the work required in three or more studies, or whose conduct does not conform to the requirements of the school, and who has shown a lack of reasonable effort to reach a satisfactory standard, may be placed on probation by the Principal, and if he has not made his record satisfactory by the end of the period of probation, he may be referred to the Superintendent for suspension.

**I. Suspension:**

Each suspended pupil should be informed on suspension that he is not at liberty to enter the grounds of his own, or any other public school, except to enter the office to interview the Principal.

**J. Notice of Suspension:**

The name of a pupil who is suspended from one high school should be sent to the Principals of all the high schools of the Los Angeles District.

**4. ATTENDANCE****A. Punctuality and Regularity:**

Attendance means attention to the larger program of one's school work and is characterized by punctuality and regularity; punctuality which has become persistent and habitual becomes regularity and is one of the main features in a strong character, and is a chief source of reliability and power. Thus attendance becomes a very valuable part of one's education. Pupils who are tardy and irregular in their attendance waste their own time and that of others. Moreover, because of the new law authorizing the distribution of State School funds in proportion to the average daily attendance in the schools of the State, such irregularity will cause a distinct monetary loss to the Los Angeles City High School District which will diminish the educational resources of the city by just so much.

**B. Present During Lunch Period:**

Pupils in intermediate and high schools shall not leave the grounds during school hours without permission from the Principal; this rule shall also apply to pupils leaving the school grounds during the noon intermission.

**C. Excuses:**

Time lost through absence or tardiness can never be regained, but assurances of good faith on the part of the student may be secured by excuses assigning good and sufficient reasons for the irregularity, signed by a parent or guardian and presented upon the student's return to school. Only those reasons for absence which outweigh the student's educational welfare, such as sickness, exposure to health, etc., or some urgent cause rendering attendance impossible, will be regarded as adequate excuses.

**D. Lost Work:**

The work lost by absence or tardiness must be done at some other time if the student is to make progress.

**E. Unexcused Absence or Tardiness:**

Repeated and persistent unexcused absence or tardiness shows bad faith and lack of accord with the school on the

part of the student and is sufficient reason for denying him the privileges of the school through his suspension.

**F. Hours:**

In the high schools the hours of tuition and study may occupy any time between 8 a. m. and 4:05 p. m.

## 5. SCHEDULE OF STUDIES

**A. Units and Credits:**

For the purpose of measuring the amount of scholastic work done in the high schools 5 recitations a week for one year, each recitation requiring one hour of outside preparation, is called a **Unit**. The same work for half a year is called a **Credit**. Two periods of work in unprepared subjects are counted as equal to 1 period in prepared subjects. The following subjects are considered unprepared work: Manual training, chorus singing, penmanship, typewriting and laboratory work. Fractions of a credit are allowed for work in subjects requiring less than 5 recitations a week.

**B. Work Required:**

The course of study is so arranged that a student's normal program consists of 4 units of work and Physical Training. Less work may be taken, however, if such a course is deemed advisable by the Principal, after a consideration of the student's case and his reasons for taking less work. A student may take 5 or more units of work should the Principal deem it advisable, but only in accordance with the written request of parent or guardian. A pupil must have the consent of the Principal to drop a subject once begun.

**C. Home Work:**

The amount and kind of work in the course of study has been planned with the view of making it necessary that all pupils do at least two hours of home work daily. If a pupil does not study at home that fact is considered prima facie evidence that he is not doing as much work as he should do.

**D. Physical Training:**

Physical Training is required throughout the course, except when the pupil is excused by the Principal.

**E. Marks:**

In estimating the quality of a student's work the following marks are used: A-B-C-D-n-nm. A—90 to 100; B—80 to 90; C—70 to 80; D—below 70; n or nm—incomplete work.

## 6. ATHLETICS

### A. Under School Supervision:

According to the laws of the State of California all students who are in any way interested as contestants in athletic contests, inter-scholastic debates, or any other activities, regardless of date or place, are under the strict supervision of the school authorities.

### B. Eligibility:

Eligibility to any athletic competition shall be limited to those students whose academic attendance does not exceed eight semesters, unless the two schools concerned agree otherwise.

### C. Participants:

No one shall represent any school as a competitor in any athletic contest who has not been a member of that secondary school from the first two weeks of the semester, or for ten weeks immediately preceding the contest, and does not have a passing grade in three units for the previous semester, or who was not doing passing work in three units at the close of the previous half quarter, or who has taken part in any contest of higher grade than secondary schools, or has used his athletic skill for financial gain, or who has represented any secondary school in any athletic contest for four years.

### D. Lists of Contestants:

Lists of contestants, which shall be certified to by the Principals of the respective schools, shall be exchanged at least three days previous to an inter-school contest.

### E. Disorderly Conduct:

Use of tobacco, gambling, or other disorderly conduct at these contests are punishable just the same as if the offense were committed on the school premises.

## 7. GRADUATION

### A. Diplomas:

Diplomas are conferred upon the completion of 16 units or 32 credits. All subjects, except Physical Training when not accompanied by lectures on Hygiene, are counted for graduation. Fractions of a credit are allowed for subjects requiring less than five recitations a week.



**B. Flowers:**

No flowers are permitted at the commencement exercises.

**8. COLLEGE ENTRANCE REQUIREMENTS****A. University of California:**

The requirements for entrance to the University of California are:

For colleges in Group I, viz.: Letters, Social Sciences, Natural Sciences, Commerce and Agriculture, and in the five-year courses in the Colleges of Mechanics, Mining, Civil Engineering and Chemistry: English, 2 units; Mathematics, 2 units; United States History and Government, 1 unit; Foreign Language, 4 units; Natural Science, 1 unit, which must be one of the following subjects taken in 3rd or 4th year: Physics, Chemistry, Botany, Zoology or Physiology.

For colleges in Group II, viz.: The four-year courses in the college of Mechanics, Mining, Civil Engineering, and Chemistry: English, 2 units; Mathematics, 4 units; United States History and Government, 1 unit; Physics, 1 unit; Free-hand Drawing, 1 unit; Mechanical Drawing, 1 unit; any two of the following: Latin, Greek, French, German, Spanish, or Advanced English, each Language to be taken two years.

Physical Geography is prerequisite for Economical Geography.

Medieval and Modern History or English History is prerequisite for Industrial History.

Botany is prerequisite for Horticulture.

**B. Stanford University:**

Requirements for admission to Stanford University are: English, 2 units; Elective, 13 units.

**C. Eastern Colleges:**

Pupils who wish to prepare for the entrance examinations for Yale, Harvard, Princeton, Massachusetts Institute of Technology, or for the examinations of the College Examining Board should notify the Principal since such preparation may call for subjects not contained in our curriculums, and for methods of treatment different from the preparation for those colleges with which our high schools are affiliated.

## **6. EVENING HIGH SCHOOL**

1. All residents of the City of Los Angeles over 15 years of age who have completed the work of the eighth grade in the elementary school are eligible to attend the Evening High School.
2. In so far as possible the Evening High School shall be controlled by the same rules which control the Day High Schools.

# High and Intermediate Schools

## LIST OF TEXT BOOKS

1912-1913

### Spelling

Grades	Subjects	Publishers	Price
7-8,	Spelling, Book II, State Series		\$0.25

### Composition-Rhetoric

9,	Hanson's English Composition	Ginn & Co.	.90
10,	Woolley's Handbook of Composition	Heath & Co.	.75
9-10-11-12,	The New Composition-Rhetoric, Scott & Denny (Revised Edition)	Allyn Bacon	1.35

### History of English Literature

11-12,	Long's History of English Literature	Ginn & Co.	1.50
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### Oral English Text Books

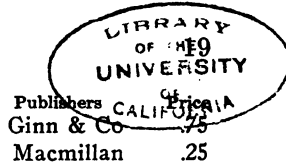
9,	Laycock & Spofford's Manual of Argumentation	Macmillan	.55
8-9,	Cumnock's Choice Readings	A. C. McClurg Co.	1.35
	Southwick's Steps to Oratory	A. B. Co.	1.10
11,	Pattee's Practical Argumentation	Century Publishing Co.	1.20
	Robert's Rules of Order	Scott, Foresman & Co.	.75

## LIST OF TEXT BOOKS

### English

B7,	Blodgett's Fifth Reader	Ginn & Co.	.75
A7,	Longfellow's Evangeline	Riverside	.15
	Irving's Sketch Book	Macmillan	.25

# Course of Study



Grades	Subjects	Publishers	
	Blodgett's Fifth Reader	Ginn & Co.	.75
	Stevenson's Treasure Island	Macmillan	.25
B8,	To be selected from:		
	Macaulay's Horatius	Riverside	.15
	Scott's Lady of the Lake	Macmillan	.25
	Whittier's Snow Bound	Riverside	.15
	Longfellow's Tales of a Wayside Inn	Macmillan	.25
	Dickens' Christmas Carol	Macmillan	.25
A8,	To be selected from:		
	The Courtship of Miles Standish	Riverside	.15
	Plutarch's Lives	Macmillan	.25
	Franklin's Autobiography	Macmillan	.25
	Shakespeare's Julius Caesar	Macmillan	.25
	Hale's A Man Without a Country	Macmillan	.25
	Parton's Captains of Industry	Riverside	.15
B9,	To be selected from:		
	Scott's Ivanhoe	Heath & Co.	.55
		Macmillan	.25
	(Standard English Classics)	Ginn & Co.	.55
	Scott's Quentin Durward	Everyman	.35
		Macmillan	.25
	Scott's Talisman	Macmillan	.25
		Everyman	.35
	Scott's Lay of the Last Minstrel	Macmillan	.25
		Lake	.30
	Cooper's The Last of the Mohicans	Macmillan	.25
		Everyman	.35
	Dickens' Oliver Twist	Everyman	.35
	Hughes, Tom Brown's School Days	Macmillan	.25
	Burroughs' Birds and Bees	Riverside	.15
	Stevenson's Travels with a Donkey	Macmillan	.25
	Arabian Nights Entertainments	Macmillan	.25
		Everyman	.35
	Gayley & Flaherty's Poetry of the People	Ginn & Co.	.55
	Webster's Dictionary (Pocket)		.25
	Hanson's English Composition	Ginn & Co.	.90
	A Brief English Grammar by Scott & Buck		
		Scott, Foresman Co.	.70
	The New Composition-Rhetoric (Rev. Ed.)	Allyn & Bacon	1.35

Grades	Subjects	Publishers	Price
A9,	To be selected from:		
	Gayley & Flaherty's Poetry of the People	Ginn & Co.	.55
	Irving's Alhambra	Macmillan	.25
	Byron's Poems	Everyman	.35
	Selections from Byron		
	(Standard English Classics)		.35
	Byron's The Prisoner of Chillon	Riverside	.15
	Dickens' David Copperfield	Everyman	.35
	Dicken's Nicholas Nickleby	Everyman	.35
	Hawthorne's Twice Told Tales	Macmillan	.25
		Everyman	.35
	Lake English Classics (Scott, Foresman)		.45
	Blackmore's Lorna Doone	Macmillan	.25
		Everyman	.35
	Parkman's Conspiracy of Pontiac		
	Everyman, Vols. I, II, each		.35
	Cervantes' Don Quixote, Vol. I	Everyman	.35
	Shakespeare's Midsummer Night's Dream		
		Riverside	.15
		Arden-Heath & Co.	.25
	Shakespeare's Merchant of Venice		
	(Hudson)	Ginn & Co.	.35
		Macmillan	.25
		Heath & Co.	.25
8-9,	Cummock's Choice Readings		
	A. C. McClurg & Co.		1.35
A9,	Laycock & Spofford's Manual of Argumentation		
	Macmillan		.55
	Southwick's Steps to Oratory	A. B. Co.	1.10
B10,	To be selected from:		
	Gayley's Classic Myths	Ginn & Co.	1.65
	Guerber's Myths of Greece & Rome	A. B. Co.	1.65
	Homer's Iliad	Macmillan	.25
	Homer's Odyssey	Macmillan	.25
		Riverside	.75
	Ulysses Among the Phaeacians	Riverside	.15
	Tennyson's Idylls of the King	Macmillan	.25
	Bunyan's Pilgrim's Progress	Macmillan	.25
	Coleridge's Ancient Mariner	Riverside	.15
	Shakespeare's As You Like It	Riverside	.15
		Macmillan	.25
		(Arden) Heath & Co.	.25
		(Hudson) Ginn & Co.	.35

Grades	Subjects	Publishers	Price
B10,	Shakespeare's Henry Fifth	Silver Burdette	.30
		Macmillan	.25
		(Arden) Heath & Co.	.25
		(Hudson) Ginn & Co.	.35
	Woolley's Handbook of Composition		
		Heath & Co.	.75
A10,	To be selected from:		
	Representative Poems with Carlyle's Essay on Burns (Standard English Classics)	Ginn & Co.	.35
	Carlyle's Essay on Burns	Macmillan	.25
	Emerson's Fortune of the Republic	Riverside	.15
	Emerson's Essays (American Scholar)	Macmillan	.25
	Curtis' Public Duty of Educated Men	Maynard-Merrill Co.	.15
	Washington's Farewell Address and Webster's First Bunker Hill Oration (Standard English Classics)	Ginn & Co.	.30
		Heath & Co.	.25
	Selections from Lincoln (Standard English Classics)	Ginn & Co.	.35
	Shakespeare's Julius Caesar	Heath & Co.	.25
		Macmillan	.25
		(Gateway) A. B. Co.	.40
		(Hudson) Ginn & Co.	.35
	Thoreau's Walden	Everyman	.35
	Parkman's Oregon Trail (Standard English Classics)	Ginn & Co.	.50
	Lowell's Vision of Sir Launfal	Riverside	.15
10-11-12,	Gayley & Young's Principles & Progress of English Poetry	Macmillan	1.20
A10,	Poe's Select Poems and Tales (Standard English Classics)	Ginn & Co.	.35
B11,	To be selected from:		
11-12,	Long's History of English Literature	Ginn & Co.	1.50
B11,	Chaucer's Prologue	Macmillan	.25
	Everyman	Everyman	.35
	Dryden's Poems	Maynard-Merrill Co.	.15
		Riverside	.15
	Pope's Poems	Maynard-Merrill Co.	.15
		Riverside	.15

Grades	Subjects	Publishers	Price
	Shakespeare's Twelfth Night		
		(Hudson) Ginn & Co.	.35
		Macmillan	.25
		Heath & Co.	.25
	Shakespeare's King Lear	Heath & Co.	.25
		Macmillan	.25
		(Hudson) Ginn & Co.	.35
	Macaulay's Essays on Milton and Addison		
	(Standard English Classics)	Ginn & Co.	.35
	Macaulay's Warren Hastings	Macmillan	.25
	Bacon's Essays	Macmillan	.25
	Huxley's Essays		
	(Standard English Classics)	Ginn & Co.	.35
	Lowell's Commemoration Ode	Riverside	.15
	Lowell's Lincoln	Riverside	.15
	Lowell's Democracy	Riverside	.15
	Select Orations	Macmillan	.25
	Roberts' Rules of Order	Scott, Foresman & Co.	.75
	Pattee's Practical Argumentation		
		Century Pub. Co.	1.20
	Spencer's Faery Queen I, II,		
		Maynard-Merrill Co.	.15
	Gayley & Young's Principles and Progress of English Poetry	Macmillan	1.20
A11,	Emerson's Essays (Compensation and Self Reliance)	Scott, Foresman & Co.	.40
	Addison's Sir Roger de Coverley Papers		
	(Standard English Classics)	Ginn & Co.	.35
A11,	Goldsmith's Vicar of Wakefield	Macmillan	.25
	Eliot's Romola	T. R. Crowell	.45
	Eliot's Silas Marner		
	(Standard English Classics)	Ginn & Co.	.35
		Macmillan	.25
		Appleton	.35
	Dickens' A Tale of Two Cities	Macmillan	.25
		Ginn & Co.	.55
	Thackeray's Henry Esmond	Macmillan	.25
		Everyman	.35
	Hawthorne's House of the Seven Gables		
		Macmillan	.25
	Brander Matthews' The Short Story		
		American Book Co.	1.10

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Grades	Subjects	Publishers	Price
	Cody's Ten Famous Short Stories	A. C. McClurg Co.	1.00
	Goldsmith's The Deserted Village and Gray's Elegy	Ginn & Co.	.30
		Heath & Co.	.25
	Gaskell's Cranford	Ginn & Co.	.35
	Gayley & Young's Principles and Progress of English Poetry	Macmillan	1.20
12th Year—	Lincoln's Cooper Union Speech	Macmillan	.25
	Burke's Speech on Conciliation	Appleton	.35
		Longmans, Green & Co.	.30
		(Gateway) A. B. Co.	.40
	Webster-Hayne Debate (R. L. Series, Nos. 121 and 122 bound together)	Houghton-Mifflin Co.	.40
	Ruskin's Sesame and Lilies	Macmillan	.25
		Scott, Foresman & Co.	.30
	Lamb's Essays of Elia	Macmillan	.25
		Heath & Co.	.40
	De Quincey's Joan of Arc and The English Mail Coach	Heath & Co.	.25
		Macmillan	.25
	Shakespeare's Macbeth (Arden)	Heath & Co.	.25
		Macmillan	.25
		(Gateway) A. B. Co.	.45
		(New Hudson) Ginn & Co.	.55
		Scribner's English Classics	.30
	Wordsworth, Shelley, Keats (Selections)	A. B. Co.	.45
		Maynard-Merrill Co.	.15
		Riverside	.15
		Everyman	.35
	Tennyson's Poems	Riverside	.15
		Maynard-Merrill Co.	.15
		Everyman	.35
	Robert Browning, Selection from Poems (Standard English Classics)	Ginn & Co.	.35
		Maynard-Merrill Co.	.15
		Riverside	.15
		Everyman	.35
	Matthew Arnold's Essays	Everyman	.35
	Goldsmith's She Stoops to Conquer	Macmillan	.25



Grades	Subjects	Publishers	Price
	Sheridan's The Rivals	Macmillan	.25
	Ibsen's The Doll's House	Everymann	.35
	Rostand's Cyrano de Bergerac	Jenkins	1.10
	Peabody, Elizabeth Preston—The Piper	Houghton-Mifflin Co.	1.10
	Phillips, Stephen, Ulysses	Macmillan	1.25
	Abernathy's American Literature	Maynard, Merrill & Co.	1.10
	Gayley & Young's Principles and Progress of English Poetry	Macmillan	1.20

### Science

B8-A8,	Primer of Hygiene	Macmillan	.30
B9-A9,	Tarr's New Physical Geography (reference)	Macmillan	1.10
	Conn's Bacteria, Yeasts and Molds	Ginn & Co.	1.10
	Harrington's About the Weather	Appleton	.70
B9-A9,	Berger & Coldwell's Botany	Ginn & Co. (Intro.)	1.30
B10-A10,	Osterhaut's Experiments with Plants	Macmillan	1.35
B10-A10,	Hough & Sedgewick's The Human Mechanism	Ginn & Co.	2.15
B10-A10,	Linville & Kelley's Text Book in General Zoology	Ginn & Co.	1.65
B11-A11,	Milliken & Gale's First Course in Physics	Ginn & Co.	1.35
	Cavanaugh, Westcott, Twinning's Physics Laboratory Manual	Ginn & Co.	.70
B12-A12,	McPherson & Henderson's Exercises in Chemistry	Ginn & Co.	.45
	Henderson & McPherson's An Elementary Study of Chemistry	Ginn & Co.	1.40
	Brownlee & Other's First Principles of Chemistry	Allyn & Bacon	1.35
	Morgan's Chemistry, An Elementary Text Book	Macmillan	1.35
	Household Chemistry Manual, Blanchard	Allyn & Bacon	.50

### Advanced Chemistry

B12-A12,	Morgan's Qualitative Analysis	MacMillan	2.00
	Talbot's Quantitative Analysis	Macmillan	1.65

## Course of Study 25

Grades	Subjects	Publishers	Price
	Hopkins' Experimental Electro Chemistry	Van Nostrand	3.00
	Dana's Manual of Mineralogy and Petrography	Wiley & Sons	2.00
	Eakles' Mineral Tables	Wiley & Sons	1.25
	Norton's Elements of Geology	Ginn & Co.	1.65
	Ries' Economic Geology of the U. S.	Macmillan	3.60
	Furman's Manual of Practical Assaying	Wiley & Sons	3.00
	Wilson's Cyanide Processes	Wiley & Sons	1.50

### Advanced Physics

B12-A12, Sheldon's Direct Current Machinery	Van Nostrand	2.50
Sheldon & Mason's Alternating Current	Van Nostrand	2.50
Milliken's Molecular Physics and Heat	Ginn & Co.	1.60
Milliken's Electricity, Light and Sound	Ginn & Co.	2.10
Curtis Loose Leaf Folder		.40
University Binder		.25
I-P Student's Note Book		.40

### Engineering

B12-A12, Heat Engines (New Edition of Steam) by William Ripper	Longmans, Green & Co., 1909	1.00
Applied Mechanics & Mechanical Engineering, by Prof. Jamison, Vol. IV, Hydraulics		1.50

### Commercial

B7-A9, Penmanship Complete Student's Manual	Zaner & Bloser	.25
B9, 70 Lessons in Spelling	A. B. Co.	.20
B7-A9, Bookkeeping, Introductory Text	Weber	.50
Introductory Blanks	Weber	.25
Part II	Weber	.80
B9-A9, Arithmetic (Practical Business, Moore & Miner)	Ginn & Co.	1.10
B10, Powers & Lyons Wholesale Set	J. A. Lyons & Co.	2.00

Grades	Subjects	Publishers	Price
B10,	Corporation Blanks	Weber	.30
B10,	Corporation Text	Weber	.25
B10,	Modern Illustrative Banking Text	A. B. Co.	.55
	Modern Banking Outfit	A. B. Co.	.80
B10-A11,	Sten. Wagner Phonography	Wagner	1.00
A11,	Commercial Law, Gano's	A. B. Co.	1.00

**Home Economics**

B7-A8,	Flagg's Manual of Home Economics		.75
B9-A9,	No Book		
B10-A10,	F. M. Farmer's Boston Cooking School		
	Cook Book	Little, Brown & Co.	2.00
	Olsen's Pure Foods	Ginn & Co.	.80
B11-A11,	No Book		
B12-A12,	Snyder's Human Foods	Macmillan	1.50
	Maria Parloa's Home Economics	Century Co.	1.50

**Music**

B7-A8,	Purchased by Pupils—Laurel Music		
	Reader (Spec. Ed.) Birchard Pub. Co.		.55
	Furnished by School—Alternate Third Reader,		
	Modern Series	Silver-Burdette Co.	.55
B9-A12,	Purchased by Pupils—Hamilton's Outlines		
	of Music History	Oliver Ditson Pub. Co.	1.25
	Laurel Song Book	Birchard Pub. Co.	1.10
	Furnished by School—Harmonia		
		Silver-Burdette Pub. Co.	.55
	Part Songs for Mixed Voices, Aiken.		
		A. B. & Co.	.75
	The School Song Book, Students' Ed.		
		Birchard Pub. Co.	.55
B11-A12,	Harmony. No adoption		

**Art**

A11,	Reinach's Apollo	Scribner	1.50
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**DRAWING****Mechanical Drawing**

B7-A12,	1 Set Drawing Instruments.		
	1 24" Transparent or ebonized edge T-square.		
	1 12" Triangular architect's scale.		
	1 6" Transparent 45x45 degree triangle.		

- 1 9" Transparent 30x60 degree triangle.
- 1 French curve No. 26, Keuffel & Esser.
- 1 French curve No. 4, Keuffel & Esser.
- 1 20x26x $\frac{3}{4}$ " sugar pine drawing board.
- 1 4H Koh-i-noor pencil.
- 1 Eagle draughting pencil, No. 214, or  
Dixon's draughting pencil, No. 213.
- 1 National loose-leaf notebook No. 3196, with ink  
and botany paper.
- 1 12" Triangular engineer's scale No. 1631,  
Keuffel & Esser.

### Freehand Drawing

#### INTERMEDIATE SCHOOLS

Grades	Subjects	Publishers	Price
B7-A9,	Box Pastello		.10
B7-A9,	B1-Water Color Box with No. 7 Bradley Brush	Milton Bradley	.20
	or Prang Color Box, Set No. 3 "A" with No. 7 Prang Brush		.20
	or A. M. G. Water Color Box No. 4 with No. 7 Brush		.20
B7-A9,	Pad Gray Paper, 20 sheets	Milton Bradley	.05
B8-A9,	Pad No. 20 White Paper or Blue Bond White, 24 sheets	Milton Bradley	.10
B9-A12,	1 11x13" Manila Envelope.		
B7-A9,	Portfolios	Milton Bradley	.05

#### HIGH SCHOOLS

- B9-A12, 1 11x13" Manila Envelope.
- 1 Eraser (H), small size.
- 1 Charcoal Holder.
- 1 Sponge Eraser.
- 1 Plastic Eraser.
- 1 Water Color Crayons, Prang's, Munsell's or Equal.
- 1 Box French Crayons.
- 1 Heavy Pasteboard Cover for 12x19" paper.
- Orange-wood Clay Modeling Tools.
- 1 Box Water Colors, Prang's, Bradley's or Atkinson &  
Metzler's.
- Water Color Brushes, Nos. 4, 7, 9.
- Eagle Academic Pencil, No. 216.

**Mathematics**

Grades	Subjects	Publishers	Price
B7-A7,	Arithmetic, Advanced, State Series		.25
B8-A9,	First Course in Algebra, Hawkes, Luby & Touton	Ginn & Co.	1.10
B10-A10,	Plane Geometry, Wentworth-Smith	Ginn & Co.	.90
B10-A10,	Breckenridge, Mercereau & Moore, Shop Problems in Mathematics	Ginn & Co.	1.10
B11-A11,	Second Course in Algebra, Hawkes, Luby & Touton	Ginn & Co.	.85
A11,	Solid Geometry, Wentworth-Smith	Ginn & Co.	.85
B12,	Plane and Solid Analytic Geometry, Ashton	Scribner	1.40
B12-A12,	Plane Surveying, Tracy	Wiley	3.00
B12,	Conant's Plane Trigonometry	American Book Co.	1.00
B12,	Wentworth's Plane Trigonometry	Ginn & Co.	1.00
A12,	Elements of Diff. & Integ. Calculus, Hardy	Ginn & Co.	1.50
A12,	Merrill, Elementary Mechanics	A. B. Co.	1.10
A12,	Merriman, Strength of Materials, Wiley	Wiley	1.10
A12,	Advanced or College Algebra, Stringham-Smith	Macmillan	1.35

**History**

B7,	Grammar School Geography, State Series		.95
A7-B8-A8,	Brief History of U. S., State Series		.80
B9-A9,	Myers' Ancient History	Ginn & Co.	1.60
B10-A10,	Myers' Medieval and Modern History	Ginn & Co.	1.60
	West's Modern History	Allyn & Bacon	1.60
B11-A11,	Cheyney's, A Short History of England	Ginn & Co.	1.55
B11,	Trotter's Geography of Commerce	Macmillan	1.20
	Brigham's Commercial Geog.	Ginn & Co.	1.20
B12-A12,	James & Sanford's American History	Scribner's	1.55
B12,	Ashley's American Government, Rev.	Macmillan	1.10
B12-A12,	Bullock's Introduction to Economics	Silver-Burdette	1.40

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Grades	Subjects	Publishers	Price
B9-A12,	Ivanhoe Historical Note Book	each	.35
B13-A13,	Seager's Introduction to Economics	Holt & Co.	2.50

### FOREIGN LANGUAGES

#### Latin

B7-A7,	Nutting, Latin Primer	A. B. Co.	.55
B8-A8,	No adoption.		
B9-A9-B10,	Moulton, Introductory Latin	Heath & Co.	1.10
B10,	Terrence Phormio	Sanborn & Co.	.55
B11 to A12,	Allen & Greenough New Latin Grammar	Ginn & Co.	1.30
B10 A10,	Towle and Jenk, Caesar, 7 books	Heath & Co.	1.40
B11-A11,	Allen & Greenough, Cicero's Orations and Letters	Ginn & Co.	1.45
B12-A12,	Greenough & Kittredge, Virgil, first six books	Ginn & Co.	1.65
B10 to A12,	Baker & Inglis, Latin Composition	Macmillan	1.10

#### Greek

B10-A10,	White, First Greek Book	Ginn & Co.	1.35
B11-A11,	Pearson, Greek Prose Composition	A. B. Co.	1.00
B11-A11,	Goodwin & White, Xenophon's Anabasis with Vocabularly	Ginn & Co.	1.65
B12-A12,	Benner, Selection from Homer's Iliad	Appleton Co.	1.75
B11 to A12,	Goodwin, Greek Grammar	Ginn & Co.	1.65

#### German

B7-A7,	No adoption.		
B8,	Foster, Geschichten und Maerchen,	Heath & Co.	.30
A-8,	Stolze, Bunte Geschichten	A. B. Co.	.35
B9,	Fraser & Van der Smissen German Grammar	Heath & Co.	1.20
A9,	Allen, Daheim	Holt & Co.	.80
B10,	Bacon, Im Vaterland	Allyn & Bacon	1.40
	Bluethgen, Peterle von Nuernberg	Heath & Co.	.40
	Zschokke, Der zerbrochene Krug	Heath & Co.	.30
	Dillard, Aus dem deutschen Dichterwald	A. B. Co.	.65

Grades	Subjects	Publishers	Price
	Grimm, Kinder und Hausmaerchen	Heath & Co.	.50
	Hohlfeld, Deutsches Liederbuch	Heath & Co.	.85
	Aus Nah und Fern, Parker School Press, Chicago	per annum	.45
A10,	Wildenbruch, Das Edle Blut	Holt & Co.	.40
	Storm, Immensee		
	Gerstaecker, Germelshausen		
	Seidel, Der Lindenbaum	Scott Foresman & Co.	.55
	Moser, Der Bibliothekar	Holt & Co.	.55
	Frommel, Raenzel und Wanderstab	Heath & Co.	.40
	Wilbrandt, Jugendliebe	Holt & Co.	.40
	Dillard, Aus dem deutschen Dichterwald	A. B. Co.	.65
	Hohlfeld, Deutsches Liederbuch	Heath & Co.	.85
	Aus Nah und Fern, Parker School Press, Chicago	per annum	.45
B11,	Pope, Prose Composition	Holt & Co.	1.00
	Fulda, Das verlorene Paradies	Ginn & Co.	.50
	Hauff, Lichtenstein	Heath & Co.	.85
	Koerner, Zriny	Heath & Co.	.45
	Rosegger, Waldheimat	Ginn & Co.	.40
	Wilbrandt, Das Urteil des Paris	Heath & Co.	.35
	Wilbrandt, Der Meister von Palmyra	A. B. Co.	.90
	Dillard, Aus dem deutschen Dichterwald	A. B. Co.	.65
	Hohlfeld, Deutsches Liederbuch	Heath & Co.	.85
	Aus Nah und Fern, Parker School Press Chicago	per annum	.45
A11,	Lessing, Minna von Barnhelm	Ginn & Co.	.50
	Hoffman, Meister Martin der Kuefner	Holt & Co.	.45
Freytag,	Die Journalisten	Ginn & Co.	.50
	Hoffman, Das Gymnasium zu Stolpenburg	Heath & Co.	.40
	Schiller, Wilhelm Tell with Vocabulary	Ginn & Co.	.75
	Freytag, Das Nest der Zaunkoenige	Heath & Co.	.60

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Grades	Subjects	Publishers	Price
	Hohlfeld, Aus dem deutschen Dichterwald		
		A. B. Co.	.65
	Aus Nah und Fern, Parker School Press		
	Chicago	per annum	.45
B12,	Pope, Prose Composition	Holt & Co.	1.00
	Freytag, Soll und Haben	Heath & Co.	.60
	Scheffel, Der Trompeter von Saekkingen		
		A. B. Co.	.85
	Goethe, Hermann und Dorothea	Ginn & Co.	.65
	Heine, Die Harzreise	Heath & Co.	.50
	Keller, Kleider machen Leute	Heath & Co.	.40
	Keller, Bilder us der deutschen Litteratur		
		A. B. Co.	1.10
	Aus Nah und Fern, Parker School Press		
	Chicago	per annum	.45
A12,	Pope, Prose Composition	Holt & Co.	1.00
	Schiller, Wallensteins Tod	Holt & Co.	1.10
	Meyer, Gustav Adolfs Page	Heath & Co.	.30
	Goethe, Goetz von Berlichingen	Ginn & Co.	.90
	Goethe, Sesenheim	Heath & Co.	.35
	Schiller, Die Jungfrau von Orleans	Ginn & Co.	.80
	Prehn, Journalistic German	A. B. Co.	.55
	Keller, Bilder aus der deutschen Litteratur		
		A. B. Co.	1.10
	Aus Nah und Fern, Parker School Press		
	Chicago	per annum	.45

## FRENCH

B7-A8,	Mansion, First Year French	Heath & Co.	.55
	Bruce, Lectures Faciles	Heath & Co.	.65
B9,	Chardenal, Complete French Course		
		Allyn & Bacon	1.40
	Bruce, Lectures Facilis	Heath & Co.	.65
	Laboulaye, Contes Bleus	Heath & Co.	.40
	Bruno, Tour de la France	Heath & Co.	.50
	La Facile, Lazare Lectures Faciles	Ginn & Co.	.35
A9,	Malot, Sans Famille	Heath & Co.	.40
	Legouve and Labiche, La Cigale		
		Heath & Co.	.25
	Mairet, La Tache du Petit Pierre	Heath & Co.	.40
B10,	Rees, Pictorial French Course		
		Little, Brown & Co.	.75



Grades	Subjects	Publishers	Price
	Labiche and Martin, La Poudre aux Yeux	Heath & Co.	.35
	Labiche & Martin, Le Voyage de M. Perrichon	Heath & Co.	.35
	Erckmann-Chatrian, Madam Therese	Heath & Co.	.45
	Bedolliers, La Mere Michel et son Chat	A. B. & Co.	.30
	Halevy, L'Abbe Constantin	Heath & Co.	.45
	Daubet, Let Uetit Chose	Heath & Co.	.35
	Francois, Introductory French Comp.	A. B. & Co.	.30
A10,	Merimee, Columba	Heath & Co.	.50
	Dumas, La Question d'Argent	Heath & Co.	.35
	Sand, La Mare au Diable	Ginn & Co.	.40
	Sand, La Petite Fadette	Holt & Co.	.55
	Dumas, Les Trois Mousquetaires	A. B. Co.	.65
	Dumas, Le Chevalier de Maison Rouge	A. B. Co.	.45
B11,	Hugo, Les Miserables	Heath & Co.	.90
	Hugo, Quatre-vingt-treize	Heath & Co.	.55
	Daudet, Tartarin de Tarascon	A. B. Co.	.50
	Scribe, La Bataille de Dames	A. B. Co.	.35
	Daudet, Choix de Contes	Heath and Co.	.35
	Francois, Advanced French Comp.	A. B. Co.	.90
A11,	Moliere, Bourgeois Gentilhomme	Heath & Co.	.35
	Lamartine, Grazielle	Heath & Co.	.40
	Rostand, Les Romanesques	Ginn & Co.	.40
	Lamartine, Jeanne d'Arc	Heath & Co.	.40
	Rostand, La Princesse Lointaine	Heath & Co.	.45
	Loti, Pecheur d'Islande	Heath & Co.	.45
B12,	Renan, Souvenirs d'enfance et de Jeunesse	Heath & Co.	.65
	Balzac, Le Cure de Tours	Heath & Co.	.35
	Balzac, Ursule Mirouet	Holt & Co.	.90
	Hugo, Hernani	Heath & Co.	.65
	About, Le Roi des Montagnes	Heath & Co.	.55
	Voltaire, Zadig	Heath & Co.	.50
	Maupassant, Huit Contes Choisis	Heath & Co.	.30
A12,	Hugo, Ruy Blas	Heath & Co.	.75
	Augier, Le Gendre de M. Poiriere	Heath & Co.	.40
	Racine, Ahalie	Heath & Co.	.35
	Coppee, Le Pater	Ginn & Co.	.30

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Grades	Subjects	Publishers	Price
	Balzac, Le Pere Goriot	Heath & Co.	.90
	Vigny, La Canne de Jonc	Heath & Co.	.45
	Loti, Ramuntcho	Heath & Co.	.35

## SPANISH

B7,	Libro Primero de Lectura, Cyr.	Ginn & Co.	.35
A7,	Libro Segundo de Lectura	Amer. Book Co.	.40
	Libro Segundo de Lectura, Cyr.	Ginn & Co.	.40
B8,	Libro Tercero De Lectura	Silver, Burdette Co.	.40
B7-A8,	(Grammar) No adoption.		
	Worman, First Spanish Book	A. B. Co.	.45
B9,	Marion y Des Garennnes, Introduccion a la Lengua Castellana	Heath & Co.	1.00
	Worman, First Spanish Book	A. B. Co.	.45
A9,	Worman, Second Spanish Book	A. B. Co.	.45
	Fontaine, Doce Cuentos Escogidos		
		W. R. Jenkins	.50
	Hill, Spanish Tales for Beginners	Holt & Co.	1.10
	Giese and Cool, Spanish Anecdotes		
		Heath & Co.	.65
	Valera, El Pajaro Verde	Ginn & Co.	.45
B10,	Crawford, Spanish Composition	Holt & Co.	.80
	Carrion and Asa, Zaragueta	Silver Burdett	.55
	De Asensi, Victoria y otros Cuentos		
		Heath & Co.	.55
	Geografia Elemental	Ginn & Co.	.85
	Rudimentos de la Hist, de America	Ginn & Co.	.65
	El Senor Gobernado	Aza y Carrion	
	El Fenix Apartado	77 Bis. Mexico D. F.	.40
	Galdos, Marianela	A. B. Co.	1.00
	Valdes, La Alegria del Capitan Ribot		
		Heath & Co.	1.00
	Fontaine, Flores de Espana	A. B. Co.	.50
	Nunez de Arce, El Haz de Lena	Heath & Co.	.70
	Breton, Quien es Ella?	A. B. Co.	.75
	Galdos, Electra	A. B. Co.	.75
	Morrison, Tres Comedias Modernas	Holt & Co.	.70
	Bonilla, Spanish Daily Life	Newson Co.	1.00
	Hills and Ford, A Spanish Grammar		
		Heath & Co.	1.40
A11,	Alarcon, El Capitan Veneno	Heath & Co.	.55
	Caballero, La Familia de Alvareda	Holt & Co.	.80

Grades	Subjects	Publishers	Price
	Valera, El Comendador Mendoza	A. B. Co.	.85
	Moratin, El Si de las Ninas	A. B. Co.	.55
A11-B11,	Umphrey, Spanish Prose Composition		
		A. B. Co.	.85
B12,	Dearteaga, Spanish Commercial Composition		
		Bretano	1.00
	Valdes, Jose	Heath & Co.	1.00
	Padre Isla, Lesage's Gil Blas	Heath & Co.	1.00
	Galdos, Dona Perfecta	Ginn & Co.	1.10
	Calderon, La Vida es Sueno	A. B. Co.	.80
	Bazan, Pascual Lopez	Ginn & Co.	.85
	Becquer, Legends, Tales and Poems		
		Ginn & Co.	1.10
A12,	Echegaray, El Gran Galeoto	Koehler	1.00
	Valera, Pepita Jiminez	Heath & Co.	1.00
	Telles, Don Gil de las Calvas Verdes		
		Holt & Co.	.85
	Echegaray, O Locura O Santidad	Heath & Co.	.45
	Larra, Partir a Tiempo	A. B. Co.	.45
	Ibanez, La Barraca	Holt & Co.	.90
	Cervantes, Don Quijote	Appleton Co.	1.00
	Ford, History of Spanish Literature		
		Holt & Co.	1.10

# Outlines of Various Subjects

## ART

### **Purpose:**

The purpose of a course in Art is to attain the artistic habit of mind; to cultivate appreciation and enjoyment of the beautiful by observation, by reproducing what is seen, by cultivating the imagination through evolving new creations, by helping students to acquire a sense of power through skill in technique and a knowledge of the principles of harmony of color; to utilize in the practical affairs of life their technical attainments; to give labor esthetic expression; and to assist in raising the standard of civic art in the community.

### **Scope:**

The scope of the work in Art in the Intermediate and High Schools includes practice in handling the different media for artistic expression; pictorial representation of objects within and without the classroom; studies from life; designing; illustration; domestic decoration; clay-modeling; applied art work in wood, metal, and other materials; art history and art appreciation either by lectures or by the study of text.

### **Methods:**

In teaching pupils to see with understanding, to do without loss of individuality, to repeat again and again without discouragement in order to acquire skill, it is necessary that the teacher be master of many methods. Variety of methods as well as of work is necessary to bring out the different powers of the individual. To become an adept in developing a love for proportion, rhythm and harmony in different pupils a teacher must approach them at different angles and with different methods, with the idea of thought in the conception, delight in the work and adaptation to use and environment.

### **B7:**

Object Drawing—Simple groups in outline, color schemes in flat tones; perspective, outline studies from books, boxes, etc.

Plant Study—Flower, fruit, seed pods, etc.; composition; decorative treatment.

Landscape composition.

**A7:**

Color—Color charts, color schemes, making of color book.

Design—Work from plant study of previous term; block printing, stencils; apply to simple articles of use.

Picture study.

**B8:**

Object Drawing—Continuation of Seventh Grade.

Plant Study—Continuation of Seventh Grade.

Picture Study—Landscape compositions applied to book covers, etc.

**A8:**

Color—Color schemes, complimentary and analagous; study of color prints; application of color schemes.

Design—Study of space relations, applied to articles; abstract problems developed from plant study; stencils.

**B9:**

Object Drawing—Proportion; composition; perspective. Plant Study.

Lettering.

Optional—Design in connection with special work; applied art.

**A9:**

Plant Study.

Design—Space relation; space filling.

Lettering.

Applied Art.

Optional—Design in connection with special work.

**B10:**

Freehand Sketching—Perspective, interiors and exteriors or design for special work.

Object drawing.

Composition.

Lettering.

**A10:**

Historic Ornament.

Design—Invention and adaptation.

Applied Art.

**B11:**

Cast and pose drawing.  
Figure composition, decoration.  
History of art.

**A11:**

Historic ornament.  
Design—Constructive and decorative.  
Applied Art.

**B12:**

Continue B11.

**A12:**

History of Art.  
Applied Design.  
Applied Art.

**DOMESTIC ART OUTLINE**

**B9:**

Design—Spacing, tucks, ruffles; for outline, darning, couching, etc., applied to simple bag or border.

Color—Complimentary and analagous schemes; freehand sketches; proportion; composition.

**A9:**

Design—For needlework, scallops, French embroidery, applied to towels, waists, doilies, etc.

Color.

Freehand Sketches.

**B10:**

Design—For needlework; long and short, solid; pillow top; costume design.

Color—Interiors; home plans.

**A10:**

Design—Lettering and monograms, applied to household linens.

Costume design.

Color schemes.

Home plans.

## COMMERCIAL

### ARITHMETIC

**Purpose:**

To develop in pupils efficiency in handling such arithmetical problems as are likely to come into their experience in business life.

**Scope:**

To cover all principles of arithmetic which have a direct bearing on business life laying emphasis on exercises in simple calculation.

**Methods:**

The methods are those approved by best business usage. Since absolute accuracy is a prime essential, verification and checking are introduced wherever possible. Speed is developed through constant drill.

**B9:**

Fundamental operations, whole numbers, decimals and fractions. Stress laid on accuracy as principles are familiar. Aliquot parts and billing. Only such short methods as are of practical value and easily remembered. Denominate numbers developed in so far as is necessary for use in practical measurements and billing. Percentage and its application to profit and loss, trade discount and simple interest.

**A9:**

Bank discount; partnership and the adjustments of losses and gains in partnership; stocks and bonds; partial payments; bank balance; property, fire and marine insurance; financial statements; commission and brokerage; and the use of tables in computing compound and annual interest.

### BOOKKEEPING

**Purpose:**

Mental development, the ability to read and understand what has taken place in transactions, to think out the results of transactions and reduce the results to the form of entries and accounts. Independent thinking on the part of the pupil is the aim of all the work.

**Scope:**

The study of bookkeeping from the simplest cash transaction through the complex entries necessary for the adjustment of interest between partners, corporation accounts,

etc. The use of the journal, ledger, cash book, sales book, in voice book, special columns, accounts receivable and accounts payable books, stock ledgers, etc., and the understanding and use of all kinds of commercial papers and forms.

**Methods:**

The presentation of the ledger account first, its interpretation being kept constantly before the pupil. Books such as journal, cash book, etc., and all business forms and papers considered as intermediate steps between the business transaction and the final result, the interpretation of the ledger account. New points introduced one at a time, and worked out several times before passing on to other points. Emphasis constantly placed upon reason and not upon form, form being merely the convenient expression of the reason and deductions from the transaction.

**In Intermediate Schools****B7:**

The study of bookkeeping as a whole, emphasizing it from the ledger account standpoint, then a study of journalizing as an intermediate step between the business transaction and the ledger account. The study of the theory and practice, and the routine of posting. The trial balance, how and why obtained.

**A7:**

Financial statement, why and how made. The figuring of interest and discount by the sixty-day, or bankers' method. Continuation of work in first semester with practical application of interest and discount.

**B8:**

The study of ordinary business forms and papers, and their use in connection with a simple set in wholesaling. The study of the theory of the cash book, its uses and form. Reviews and tests.

**A8:**

A continuation of the work as laid out under the previous work, extending it so as to include the sales book, invoice book, and the papers and forms involved in real estate sales and purchases, such as deeds, mortgages, certificates of title, etc., the loaning of money and the use of drafts. Reviews and tests.



**B9, A9:**

Specialized accounting as applied in a wholesale grocer's set, introducing special columns and books with appropriate forms and papers. Theory and practice in forming corporation accounts worked out through the series of problems, followed by a series of exercises dealing only with accounts peculiar to corporations. Theory and practice of banking as found in National Banks.

**In High Schools****B9:**

The study of housekeeping as a whole emphasizing it from the ledger account standpoint, then a study of journalizing as an intermediate step between the business transaction and the ledger account. The study of the theory and practice, and the routine of posting. The trial balance, how and why obtained. Financial statement, why and how made. The figuring of interest and discount by the sixty-day, or bankers' method. The study of the ordinary business forms and papers, and their use in connection with a simple set in wholesaling. The study of the theory of the cash book, its uses and form. Reviews and tests.

**A9:**

A continuation of the work as laid out under the first semester, extending it so as to include the sales book, invoice book, and the papers and forms involved in real estate sales and purchases, such as deeds, mortgages, certificates of title, etc., the loaning of money and the use of drafts. Reviews and tests.

**B10:**

Specialized accounting as applied in a wholesale grocer's set, introducing special columns and books with appropriate forms and papers. Theory and practice in forming corporation accounts worked out through the series of problems, followed by a series of exercises dealing only with accounts peculiar to corporations. Theory and practice of banking as found in National Banks.

**A10:**

Business practice in which a class is organized into communities under sixth class charters, each pupil becoming the head of a fictitious family of five, and entering into the busi-

ness life of the community in such a way as to provide for this family, each pupil keeping such books as may be necessary in his business relations, and a special set covering all of his personal, or family affairs. An intercommunication plan of doing business with the other high schools is used to some extent. Specialized schools may use subject matter suited to their specialties.

## **LAW**

The purpose of the course in Commercial Law is to lay the foundations for correct reason as to the rights and privileges that one has and the corresponding duties and obligations that one owes in business transactions. It is the aim to acquire a knowledge of law, not for the purpose of litigation, but to avoid the necessity of it.

Therefore, technical rules of procedure are omitted and the basis rights emphasized which most frequently arise in transactions of every day life, in contract and in the transfer of interests in real and personal property.

It is believed that the memorizing of rules or definition should be subordinated to reasoning from principles deduced. Hence, the method followed is to study actual typical cases to which rules of law apply. An attempt is made to pursue the history of the development of law in so far as the past explains existing rules of today.

## **OFFICE PRACTICE**

### **Purpose:**

To teach the application of the pupil's knowledge in bookkeeping, shorthand, and typewriting, as well as his clerical ability, to actual office work, thereby enabling him to combat successfully the various problems applicable to a commercial or professional vocation.

### **Scope:**

To cover duplicating, mimeographing, multigraphing; dictation to the stenographer as well as direct to the typewriter operator.

The use of the filing cabinet, transfer cases, card indexes, adding machine, telephone, dictagraph, and the various typewriter attachments, as well as commercial papers, banking and accounting.

**Methods:**

The office practice method is one in which each pupil conducts a special business, generally of his own selection, in buying and selling to other pupils, applying business principles and methods, thereby developing native ability. Each pupil is held responsible for his success or failure in the management of his chosen business. Such business as wholesaling, retailing, shipping, commission, manufacturing, real estate, etc., being conducted, in which up-to-date office appliances are used.

A few pupils, instead of taking wholesaling, retailing, shipping etc., are permitted to enter the actual commercial office of the Student Body Activities Organization in which the books of the cafeteria, book exchange, tennis court, athletic field, etc., are kept, in which the pupils take full charge of the auditing department under the supervision of the head of the commercial department.

Pupils, upon entering this second division, begin with simple duties and work up through the intricate problems of office routine.

**PENMANSHIP AND CORRESPONDENCE****Purpose:**

The purpose of penmanship is to teach the pupil to write a good, rapid style, combining ease, legibility, and endurance.

**Method:**

Two things are essential to success in learning to write, study and practice. Study is necessary to learn the forms of letters, to detect mistakes and to determine the remedies. Practice is necessary to produce the form which study evolves. The method is the same for the intermediate and high schools.

**Scope:**

This course covers the following: Lines, letters, combinations of letters, sentences, paragraphs; formal business correspondence, and business forms such as checks, drafts, notes, leases, mortgages, wills, contracts, etc.

**B9:**

Present movement first month. Thirteen basic principles. Capitals and small letters, alternately, capitals to acquire easy movement, small letters to gain better control of it.

After first month, present one new letter daily. Develop consecutively letters similar in form and movement. Combinations of letters that have been previously developed. Figures, clauses, and short sentences.

**A9:**

Sentences, simple, straightforward business principles and axioms, and paragraphs that stimulate thought and develop character. Much practice in page writing and dictation in order to acquire the ability to write and to think at the same time. Business Correspondence the last ten weeks, vitalizing the work by writing for the school, letters of inquiry and reply. (Address envelopes.) Correlate, as far as possible, business correspondence with the applied office work.

**SPELLING**

Frequent oral and written drills in spelling and definitions of words.

Discussion and spelling of business terms and abbreviations.

**STENOGRAPHY AND TYPEWRITING****In Intermediate and High Schools****Purpose:**

To develop the power, concentrate and express thought in clear, forceful and correct English, and to give pupils a practical knowledge of these subjects.

**Scope:**

The theory of phonetics, the sounds of speech, their nature and number, and a brief alphabet to represent them in writing; the application of phonetic alphabet in writing the sounds of speech; the syllable, the polysyllable; why, and when and how to abbreviate syllables and words; practice to make students efficient shorthand clerks.

**Method:**

The method is the same for Intermediate and High Schools, the subject matter varying according to the grade of the pupil.

**Stenography:****B7, B10:**

The fundamentals of the system, viz.: the sounds of speech, the characters which represent them in writing, writing syllables and why, when and how to shorten them; practice in writing and reading shorthand exercises sufficiently to make the student reasonably skillful in writing simple sentence stories.

**Typewriting:**

The all-finger touch-method; word and sentence exercises sufficient to form fixed habits in correct method of fingering.

**A7, A10:**

Writing polysyllables: why, when and how to abbreviate them. Review, with supplementary exercises to increase the power of the student in writing and reading shorthand notes. Simple literary matter dictated for transcribing on the typewriter. Simple business letters, form, punctuation, and phraseology. Training to read, keeping in mind the thought in the sentence. Vocabulary increased according to the age and progress of the student. Typewriting from notes taken in shorthand.

**B8, B11:**

Review of syllable exercises, the purpose being to familiarize the student with the words most commonly used; special emphasis on the syllable and its abbreviation; study of the principles governing the shortening of words, that the pupil may learn to abbreviate words not found in exercises. For the higher grades, business letters more technical in nature. Legal matter dictated and transcribed, accurately written, and in proper form.

**A8, A11:**

Speed development exercises; dictation given and graded on impromptu reading of notes, and making typewritten transcripts in given time.

## ENGLISH

The course of study in English has been outlined under five divisions: **Grammar, Literature, Composition, Oral English** and **Spelling**. The last three, Composition, Oral English, and Spelling, are as much a part of all subjects and disciplines which are or can be expressed in language, as they are a part of the study of English.

One of the aims in the teaching of any subject, and one of the responsibilities of the teacher of that subject is its formulation by the pupil in words, spoken and written. Although this formulation will take place in the English language, its excellence or failure is only remotely due to the work done in abstract composition. The most that the teaching of abstract composition by the English department can hope to do for other disciplines is to develop a general method or rule governing all composition, as in the science of teaching there is a general method regulating all teaching and also a special method applying to the teaching of each particular subject. In the teaching of any subject the main aim is to create interest in that subject; the responsibility therefor is with the teacher of that subject. The English department cannot assume any great responsibility in the teaching of reading and composition in other departments.

### GRAMMAR

The aim in teaching English Grammar is two-fold: First, to cultivate clear thinking; second, to teach the underlying principles of sentence structure, thereby aiding appreciation and power of expression and making the pupil conscious of a standard of usage.

In the presentation of the work outlined, necessary nomenclature shall be taught.

#### B7:

Development of the sentence sense.

Analysis of sentences as to thought.

Declarative.

Interrogative.

Imperative.

Exclamatory.

With the basic idea of thought relation in mind, the parts of the sentence are to be considered:

Subject.

Predicate.

Complement.

Development of power to recognize parts of speech

**A7:**

Analysis of the simple sentence.

Continuation of parts of speech.

Modifiers:

Words.

Phrases.

**B8:**

Development of the compound sentence.

Development of the complex sentence.

Inflection of nouns and pronouns.

**A8:**

Analysis, applying the principles of sentence structure.

As much of the work in comparison and conjugation as may be practical.

**Text:**

English Lessons, Book II State Series.

## LITERATURE

### In Intermediate Schools

The course in literature is based on the general principle of creating a taste for literature.

**Seventh Year:**

In the seventh year a foundation for a love of literature should be established. A library course is placed in this grade for two reasons: First, because the pupil should become acquainted with the classics as soon as possible; and, second, because the love for reading may be aroused most naturally at this period in the pupil's life when the interest changes from things to ideas. The teacher, acting as librarian, should encourage the pupils to read widely and freely by securing an unconscious appreciation and expression through an appeal to the ear and the tongue. The spontaneous response should be carefully cultivated, and memorization, when voluntary, encouraged. The teacher

should select for reading aloud a book that will appeal to every pupil. As soon as interest is aroused, the pupil should be encouraged to read for himself books on the supplementary list for the seventh grade.

**B7:**

For reading aloud, the teacher may select suitable material from books such as the following:

Blodgett: Fifth Reader.

Barbour: Winning His "Y."

Barbour: Tom, Dick, and Harriett.

Barbour: The Crimson Sweater.

Seton: Wild Animals I Have Known.

S. E. White: The Court of Boyville.

Kipling: Captains Courageous.

Frost or Radford: The Knights of the Round Table;

Robin Hood and other ballads; The Iliad and the Odyssey (in simple story form); The Niebelungenlied.

Longfellow: Paul Revere's Ride.

Bret Harte: Selections.

James Whitcomb Riley: Selections.

**A7:**

The books studied should be selected from the following:

Longfellow, Evangeline; Stevenson, Treasure Island; Irving, Sketch Book; Blodgett, Fifth Reader.

From the list of books suggested for supplementary reading, the pupil may select his own books. Reports of these books should consist of comment and oral reading of selections made by the pupil.

**List of Supplementary Books for the Seventh Grade**

Alcott: Little Men; Little Women; Little Wives.

Andrews: Perfect Tribute.

Arabian Nights: Ed. by Hale.

Baldwin: Story of Siegfried.

Barbour: Crimson Sweater; Tom, Dick, and Harry; Winning His "Y."

Barnes: Son of Lighthorse Harry.

Bennett: Master Skylark.

Brooks: Story of Siegfried.

Burnett: Little Lord Fauntleroy.

Carroll: Alice in Wonderland; Alice Through the Looking Glass.

Churchill: Crisis.



Clemens: Connecticut Yankee at the Court of King Arthur; Huckleberry Finn; Innocents Abroad; Prince and the Pauper; Tom Sawyer; Tramp Abroad.

Collodi: Pinocchio.

Connor: Black Rock; Glengarry Schooldays; Sky Pilot.

Cooper: Deerslayer; Last of the Mohicans; Pathfinder; Pioneers; Prairie; Spy.

Defoe: Robinson Crusoe.

Dix: Little Captive Lad.

Dodge: Land of Pluck; Hans Brinker of the Silver Skates.

Du Chaillu: Adventure Series.

Eggleston: Hoosier Schoolmaster.

Frost: King Arthur.

Greene: Picketts Gap.

Grey: Young Forester.

Grinnell: Jack, the Young Ranchman; Story of the Indian.

Hale: Man Without a Country.

Jackson: Ramona.

Kingsley: Westward Ho.

Kipling: Captains Courageous; Jungle Book; Second Jungle Book.

Liljencrantz: Thrall of Leif the Lucky.

London: Call of the Wild.

Macdonald: Back of the North Wind; Princess and

Curdie; Princess and the Goblins.

Major: Bears of Blue River.

Martin: Emmy Lou.

Munroe: Derrick Sterling.

Montgomery: Ann of Green Gables.

Ollivant: Bob, Son of Battle.

Porter: Freckles; Girl of the Limberlost.

Pyle: King Arthur and His Knights; Men of Iron; Merry Adventures of Robin Hood; Sir Launcelot and His Companions.

Radford: King Arthur.

Rice: Mrs. Wiggs of the Cabbage Patch.

Riis: Making of an American.

Ruskin: King of the Golden River.

Saunders: Beautiful Joe.

Seton: Biography of a Grizzly; Wild Animals I Have Known.

Sewell: *Black Beauty*.  
 Shaw: *Castle Blair*.  
 Stevenson: *Kidnapped*; *Treasure Island*.  
 Stowe: *Uncle Tom's Cabin*.  
 Sweetser: *Ten Boys from Dickens*; *Ten Girls from Dickens*.  
 Swift: *Gulliver's Travels*, ed. by Balliet.  
 Tappan: *Children's Hour Series*.  
 Trowbridge: *Cudjo's Cave*.  
 Verne: *Twenty Thousand Leagues Under the Sea*.  
 Wallace: *Ben Hur*.  
 Washington: *Up from Slavery*.  
 Waterloo: *Story of Ab.*  
 White: *The Cabin*; *The Forest*; *The Mountains*.  
 Wiggins: *Bird's Christmas Carol*; *Rebecca of Sunnybrook Farm*; *New Chronicles of Rebecca*; *Sussanna Sue*; *Timothy's Quest*.  
 Wyss: *Swiss Family Robinson*.

#### **Eighth Year:**

The power acquired in the previous year is applied to an intensive study of selected classics. The classics not studied should be used, if possible, for supplementary reading. Classics such as Arnold's *Sohrab and Rustum* and William Morris's *Sigurd the Volsung* may be read aloud to the pupils.

In introducing the study of poetry, the teacher should train the ear to a sense of rhythm by reading aloud to the pupils.

#### **B8:**

The classics studied may be selected from the following:

Dickens: *Christmas Carol*.  
 Longfellow: *Tales of a Wayside Inn*.  
 Macaulay: *Horatius*.  
 Scott: *The Lady of the Lake*.  
 Whittier: *Snow-Bound*.

#### **A8:**

The classics studied may be selected from the following:

Franklin: *Autobiography*.  
 Hale: *A Man Without a Country*.  
 Longfellow: *The Courtship of Miles Standish*.  
 Parton: *Captains of Industry*.  
 Plutarch: *Lives*.  
 Shakespeare: *Julius Caesar*.

### In High Schools

In the study of literature in the high school the aim is to create a taste for literature by presenting as wide a review of the classics as possible. In the years in which English is required the appeal is much more general than in those in which it is elective.

In each semester, the classics are so grouped as to allow freedom of selection, but emphasis is placed upon some one form of discourse.

#### B9:

Emphasis is placed upon the story in prose and poetry.

The classics studied are selected from the following:

Arabian Nights Entertainments.

Cooper's: The Last of the Mohicans.

Dickens: Oliver Twist.

Gayley & Flaherty: Poetry of the People.

Scott: Ivanhoe.

Scott: Quentin Durward.

Scott: The Talisman.

Scott: The Lay of the Last Minstrel.

Hughes: Tom Brown's School Days.

Stevenson: Travels with a Donkey.

Burroughs: Birds and Bees.

#### A9:

Emphasis is placed upon the story in more complex form, short stories, and Shakespearean comedy.

The classics studied are selected from the following:

Gayley & Flaherty: Poetry of the People.

Irving: The Alhambra.

Byron: Poems.

Hawthorne: Twice Told Tales.

Dickens: Nicholas Nickleby.

Dickens: David Copperfield.

Blackmore: Lorna Doone.

Parkman: Conspiracy of Pontiac.

Cervantes: Don Quixote, Vol. I.

Shakespeare: Midsummer Night's Dream.

Shakespeare: Merchant of Venice.

#### B10:

Emphasis is placed on the mythological factor in its relation to the development of the race as expressed in literature.

The classics studied are selected from the following:

Gayley: Classic Myths.  
 Guerber: Myths of Greece and Rome.  
 Homer: Iliad.  
 Homer: Odyssey.  
 Ulysses: Among the Phaeacians.  
 Tennyson: Idylls of the King.  
 Bunyan: Pilgrim's Progress.  
 Coleridge: Ancient Mariner.  
 Shakespeare: As You Like It; Henry Fifth.

**A10:**

Emphasis is placed on American literature, especially civic prose.

The classics studied are selected from the following:

Representative Poems with Carlyle's Essay on Burns.  
 Emerson; Essays (American Scholar).  
 Emerson: Fortunes of the Republic.  
 Shakespeare: Julius Caesar.  
 Curtis: Public Duty of Educated Men.  
 Washington's Farewell Address and Webster's First Bunker Hill Oration.  
 Selections: From Lincoln.  
 Lowell: Vision of Sir Launfal.  
 Poe: Select Poems and Tales.  
 Parkman: Oregon Trail.  
 Thoreau: Walden.

**B11:**

In this semester the pupil is given an introduction to English poetry.

The classics studied are selected from the following:

Chaucer: Prologue.  
 Everyman.  
 Spencer: Fairy Queen, I. and II.  
 Shakespeare: Twelfth Night; King Lear.  
 Dryden: Poems.  
 Pope: Poems.  
 Macaulay: Essay on Milton.  
 Macaulay: Warren Hastings.  
 Bacon: Essays.  
 Huxley: Essays.  
 Lowell: Commemoration Ode; Lincoln; Democracy.  
 Select Orations.  
 Gayley & Young's Principles and Progress of English Poetry.

**A11:**

Emphasis is placed on the study of the novel and the short story.

The classics studied are selected from the following:

Emerson: Essays (Compensation and Self-Reliance).

Addison: Sir Roger de Coverly Papers.

Macaulay: Essay on Addison.

Goldsmith: The Deserted Village and Gray's Elegy.

Goldsmith: Vicar of Wakefield.

Eliot: Silas Marner.

Eliot: Romola.

Dickens: A Tale of Two Cities.

Thackeray: Henry Esmond.

Hawthorne: The House of the Seven Gables.

Gaskell: Cranford.

Brander Matthews: The Short-Story.

Cody: Ten Famous Short Stories.

Gayley & Young: Principles and Progress of English Poetry.

Long: History of English Literature.

**B12-A12**

The classics studied are selected from the following:

Lincoln: Cooper Union Speech.

Burke: Speech on Conciliation.

Webster: Hayne Debate.

Lamb: Essays of Elia.

De Quincey's Joan of Arc and The English Mail Coach.

Ruskin's Sesame and Lilies.

Matthew Arnold's Essays.

Shakespeare: Macbeth.

Goldsmith: She Stoops to Conquer.

Sheridan: The Rivals.

Ibsen: The Doll's House.

Rostand: Cyrano de Bergerac.

Peabody: (Elizabeth Preston) The Piper.

Phillips: (Stephen) Ulysses.

Wordsworth: Shelley, Keats.

Robert Browning: Selections from Poems.

Tennyson: Poems.

Gayley & Young: Principles and Progress of English Poetry.

Long: History of English Literature.

Abernathy: American Literature.

**COMPOSITION****Time:**

One period per week in all grades is devoted to formal literary composition.

**Teachers' Reference:**

Lewis's First Manual of English Composition is recommended.

**Aim:**

The course in written composition aims to develop in the pupil the power of expressing himself clearly and simply so that it may be for him a natural and agreeable form of self-realization and social expression. Methods and devices for developing and perfecting this power are many, but all methods should be based on the principle of creating interest and desire for this specific self-expression and provide for the greatest possible freedom and spontaneity in its exercise. Methods and tools should be subordinate to creating freedom, power, and satisfaction. Matter should be first; manner, second.

**Methods:**

All methods should emphasize the utility of the work; its satisfactions as a means of expression; the need of all work being the pupil's own experience before it will be valuable individually or socially. Concrete visualizations, subjects that appeal to and make use of the senses lend themselves to vivid treatment and exercise the personal elements of experience and judgment. To create an interest, written interchange of ideas with fellow pupils should be encouraged; sustained correspondence with parents and friends provided for; the pupil's thoughts about his work and play written out for the purpose of oral reading. Some system of individual correspondence between pupils in remote parts of the city school system might be valuable. Before organizing the material it is frequently desirable to read, analyze, and discuss simple and artistic models of prose forms. Too much emphasis cannot be laid on the immediate effort to imitate these models. Class work is especially profitable for gathering and arranging material; for acquiring sentence-sense; and for drill in punctuation and the mechanics of language. Class work must be frequently supplemented by individual choice of subjects, thus stimulating the pupil's desire for expression. In all written composition, clearness and correctness of expression should

be emphasized. Individual correction, both by teacher and pupil, followed by frequent conferences, is absolutely necessary in all grades.

**B7:**

Primary development of material and style.

Elementary discussion of interesting and profitable subjects for composition.

Original composition requiring historical treatment for accurate, reportorial portrayal of actual incidents.

Fictitious composition for the training of the imagination.

**Mechanics:**

Emphasis on sentence-sense in distinguishing between simple sentence, the phrase, the clause, and, if the class is ready for it, the compound sentence.

Blackboard composition that involves class work.

**Punctuation Review:**

Use of the period in abbreviations and at the end of the declarative sentence.

Use of the interrogation mark.

Use of the exclamation point.

Use of the comma in setting off words in a series.

Words in apposition.

**A7:**

Original composition based on experience.

Reproduction of narratives that stimulate re-creation on the part of the pupil, especially those narratives that involve direct discourse.

**Mechanics:**

Constant review of mechanics previously emphasized.

Drill in sentence-sense as pupils elaborate their sentence structure.

**Punctuation:**

Use of quotation marks.

Use of the comma in setting off the direct quotation.

Use of the comma in setting off words in direct address.

**B8:**

Original composition based on experience.

**Narration:**

Emphasis on descriptive composition for training in close observation.

**Mechanics:**

Constant review of mechanics previously emphasized.  
Primary discussion of outline for organization of material.  
Emphasis on sentence-sense.

**Punctuation:**

Use of the comma in punctuating primary, complex, and compound sentences.

**A8:**

Discussion of the limitation of the theme subject with reference to space and time for treatment as well as a consideration of the question of interesting an audience.

Original composition based on experience.  
Emphasis on logical, expository composition.  
Narration.  
Description.  
Reproduction.  
Social letters.

**Mechanics:**

Constant review of mechanics previously emphasized.  
Emphasis on sentence-sense.

Drill in changing sentence structure and in substituting expressions for the pupil's constant reiteration of **and**, **but**, and **so**.

Drill in the use of subordinate conjunctions.

**Punctuation:**

Use of the comma in setting off

Phrases and clauses out of the natural order;  
Absolute participial constructions.

Use of the semi-colon in compound sentences—if the class is ready for it.

Use of the colon for formal introduction.

**B9:**

Reproduction.  
Short, original narration.  
Dictation exercises as tests in punctuation.  
Business letters.

**A9:**

Original compositions.  
Narrative paragraph developed by very simple outline  
Primary discussion of unity, coherence, and emphasis.



Paragraph descriptions to develop use of description in narration.

Narration and short description suggested by literature studies and other disciplines.

Social letters.

**B10:**

Original narration.

Short Description.

Narrative Description.

Original myths.

Narration and description based on literature studies and other disciplines.

Exposition: How to make; How to do.

Letters: Business, containing orders and enclosures. Social, including invitations, answers, and friendship letters.

**A10:**

Original narration and description.

Exposition: Paragraph exposition; criticism.

Narration, description, exposition based on literature subjects and other school disciplines.

**B11:**

Original description and narration.

Exposition: Concrete exposition; abstract exposition, based on experience, observation, and reflection.

Description, narration, exposition suggested by literature.

**A11:**

Original description, narration, and exposition.

New stories.

Short Stories: Plot and climax; conversation; characterization; inference; description; explanation.

**B12:**

Exposition: Use of outline in writing to test structure; informal essay, suggested by Lamb's essays.

New Stories.

Narration and description suggested by literature studies and other school disciplines.

Letters: Business and social.

**A12:**

Exposition: Making and use of briefs.

Narration and description.

Advertisements.

Letters: Business and social.

### **Advanced Composition**

(Note: Students admitted to this class only on recommendation)

Character portrayal; first from externals; later, psychologically.

Narration: Plot problems worked out and comparisons made of varied results.

Essays.

Orations for special occasions.

Verse forms studied and reproduced.

Reading for appreciation of style.

### **ADVERTISING**

(Note: Elective course for pupils in the eleventh and twelfth years)

**Time:**

Three periods per week.

**References:**

Truman J. De Weese's Practical Publicity; Calkins and Holden's Modern Advertising.

Brief history of advertising.

Study of mediums of advertising, both by laboratory method and by active practice.

Hypothetical placing on the market of a new commodity and carrying out of an advertising campaign.

### **JOURNALISM**

(Note: Elective course for pupils in the eleventh and twelfth years)

**Time:**

Two periods a week.

News stories; editorials; exchange work; editing and planning assignments; making of dummy weekly paper to cover the school news; condensing long articles into telegraphic briefs.

### **ORAL ENGLISH**

**Time:**

Two periods per week are devoted to the study of Oral English.

The course in Oral English aims to develop in the pupil the power to think on his feet, facility of expression, poise.

**B7-A7:**

A definite course of study in Oral English is not required in the seventh year. The teacher of English may prepare the pupils for the oral work in the eighth year by teaching the intelligent use of the dictionary, by correcting imperfect pronunciation, and by encouraging the pupils to read aloud. One hour per week is devoted to recreation reading, for which no outside preparation is required.

**B8:**

Emphasis should be placed on articulation, pronunciation, correct breathing, voice building.

**Text:**

Cumnock's Choice Readings (optional)

The course includes:

Use of the dictionary; reading aloud from the English classics; informal talks.

**B9-A9:**

Emphasis should be placed on articulation, pronunciation, breathing, voice building.

**Text:**

Cumnock's Choice Readings; Southwick's Steps to Oratory; Laycock and Spofford's Manual of Argumentation.

The course includes reading aloud; selections from the Cumnock Reader, and selections brought into class by pupils—such as, newspaper clippings, magazine articles, short stories.

**B10-A10:****Text:**

Laycock and Spofford's Manual of Argumentation.

The course may include either one or more of the following: Original work, informal speeches, business interviews, debate, parliamentary drill, interpretation.

**B11:****Text:**

Pattee's Practical Argumentation; Robert's Rules of Order.

The course may include either one or more of the following: Formal speeches, toasts, orations, debate, parliamentary drill, interpretation.

**A11:**

**Text:**

Pattee's Practical Argumentation; Robert's Rules of Order.

The course may include either one or more of the following: Parliamentary drill, speechmaking, orations, debate, dramatics, interpretation.

**B12-A12:**

The course may include either one or more of the following: Dramatics, interpretation, debate.

## SPELLING

**Seventh and Eighth Years:**

**Text:**

Spelling, Book II., State Series.

At least ten new words suited to the pupil's vocabulary should be given daily. These words may be taken from the text book, prepared lists, and other sources.

The simple rules for spelling classes of words should be developed from lists of examples. The pupils should learn to spell these lists of examples and to apply the rules for the following:

Monosyllables, and polysyllables accented on the last syllable.

Polysyllables not accented on the last syllable.

Final silent *e* before a suffix beginning with a vowel; and the exceptions—words ending in *ie* (die, dying), words ending in *ce* or *ge*.

Final silent *e* before a suffix beginning with a consonant.

Formation of the plural of nouns ending in *y* (lady, valley).

Formation of the plural of nouns ending in *o*.

Combinations *ei*, *ie*.

Words beginning with *al*, *ante*, *anti*, *bene*, *con*, *dis* and *de*, *fore* and *for*, *in*, *inter*, *mis*, *sc*, *sur*.

Words ending in *ness*, *ly*, *ful*, *ant* and *ent*, *ance* and *ence*.

Use of the dictionary. In the eighth year, pupils should be able to use both an abridged and an unabridged dictionary. The history of words might be commenced at this time.

**B9:**

No text. Words should be taken from lists of words that have been prepared for the especial need of the pupils.

Only those pupils that have proved themselves deficient in the ability to spell should be required to remain in the spelling class.

To those who need spelling, not more than fifty new words or fifty review words should be given each week. The words may be given in one lesson or in as many lessons as seem advisable.

Review the rules suggested in the outline for the seventh year.

Continue the use of the dictionary.

## HOME ECONOMICS

The underlying purpose of the course in Home Economics in the Los Angeles City Schools is to create and develop individuality, efficiency, and self-dependence, giving the girl a better understanding of the duties of women as producers and consumers, and intensifying the interest in all matters pertaining to the home and the extension of its influence.

### DOMESTIC ART (Sewing)

The aim of this work is to develop appreciation for the artistic and appropriate in dress and in the furnishing and decoration of the home, good judgment in the purchasing of materials, and technical skill in the planning and construction of garments. Emphasis is placed on simplicity, economy, and artistic line and color combination.

The work comprises a study of the textile fibres with relation to their growth and processes of manufacture into cloth, of the adulteration of fabrics, of the uses of different fabrics, of the planning and construction of garments, of the hygiene of clothing, of the care and repair of clothing; also a consideration of the interior decoration of the home from the standpoint of art and economy.

The work is intended to meet the needs of three classes of students:

1. Those who wish it for their own use in the home.
2. Those who wish to make it a basis for advanced study in colleges or normal school.
3. Those who will use it as a means of earning a livelihood after leaving the high school.

### In Intermediate Schools

The aim of this course is to teach the girl technical skill in sewing, simplicity and appropriateness of dress, and true economy in buying.

The course includes hand and machine sewing, study of textiles and care and hygiene of clothing.

#### **Seventh Year:**

**Time:** Two forty-minute periods a week.

1. **Sewing:** Review of the fundamental stitches in hand sewing; darning and mending; machine stitching; care and use of the sewing machine and its attachments; the principles involved in making simple underclothes.

2. **Textile Work:** Study of cotton; goods and trimmings suitable for underclothes.

#### **B7:**

Night gown, gymnasium bloomers.

#### **A7:**

Drawers, petticoat.

#### **Eighth Year:**

**Time:** Two forty-minute periods a week.

1. **Sewing:** Study of bought paper patterns and the principles involved in making simple cotton dresses. More advanced work in hand sewing; making of bows and rosettes.

2. **Textile Work:** Study of linen; goods and trimmings suitable for wash dresses.

3. Renovating and cleaning material; care of dress accessories; ribbons, gloves, shoes, etc.

4. Much emphasis is laid on simplicity and appropriateness of dress.

#### **B8:**

Child's dress, some article for the home as towels, pillow cases, etc.

#### **A8:**

Dress for self from bought paper pattern.

### In High Schools

The presentation of the following courses varies according to conditions in the different schools.

Time devoted to each course, five double periods a week, as follows:

**Practical Work:** Four double periods.

**Textile Study:** One double period.

**Preliminary Course:**

Intended for all students who enter the high school lacking previous training in sewing and related subjects.

The course includes mending, darning, patching, planning, and construction of undergarments from freehand draft and bought patterns; also elementary study of the textile fibres.

### COURSE I—SEWING

**B9:**

**Practical Work:**

Review of principles involved in the making of undergarments; pattern drafting; making of princess slip; child's dress or gingham dress, thin white dress; study of designs and materials suitable for same.

Supplementary: Simple articles for home decoration done in color from student's own design made in the Art Department.

**Textile Study:**

Growth and processes of manufacturing cotton and linen; collection of samples of materials suitable for use in articles made during the term, discussion of the economic and hygienic value of different cotton and linen materials.

**A9:**

**Practical Work:**

Designing and making of patterns in paper; making thin white waist or dress; making dress or suit of heavy material (not tailored coat); embroidering on linen, i. e., napkin, doilie, etc.; principles of fitting emphasized; discussion of care and economic value of table linen.

Supplementary: Any article in cotton or linen.

**Textile Study:**

Growth and processes of manufacture of silk and wool; economic and hygienic values of same; collection of samples of standard materials suitable for various purposes.

**COURSE II—DRESSMAKING****Prerequisite—Course I****B11:****Practical Work:**

Continued study of pattern drafting and designing from plain foundation; crinoline modeling; making of wool dress, or skirt; emphasis on method of sponging and pressing; tailored shirtwaist.

Supplementary: Silk waist.

Optional: Five weeks of Millinery.

**Textile Study:**

Methods of identification of the various textile fibres; textile adulteration; cleansing of fabrics; careful study of the economics of dress and the right apportionment of the income.

**A11:****Practical Work:**

Simple afternoon or evening dress, illustrating the draping of soft materials; study of color combinations most effective in artificial light; methods of finishing linings; draping of heavy materials as illustrated in the making of simple evening wrap.

Optional: Five weeks of Millinery.

**Textile Study:**

Continuation of B. (see above).

**COURSE III—MILLINERY****B. Practical Work:**

Designing and making of frames in buckram and willow; making of hats from foundation to trimming; making and placing of all kinds of trimming, i. e., bindings, facings, bows and rosettes, bandeaux, etc.

This course includes also a study of design and color and of materials used in the making of both hand made and factory made hats; renovating and the use of old materials; use and care of ostrich and other feathers.

**A. Practical Work:**

Designing and making of wire frames; trimming of straw hats; making of shirred hats and children's hats; dyeing and pressing of old hats and renovating of trimmings.



It is desirable for the student to make as many hats for others as possible and so study the adaptation of line and color in a hat to various types of faces. Use of old materials is encouraged.

NOTE: In all of the above courses pupils furnish their own materials.

#### **Course IV. Costume Sketching and Design**

The aim of this course is to develop creative power in the art of costume design. Practice is given in the application of the principles of harmony as expressed in line, in dark and light, and in color. The course includes sketching of costumes in pencil, charcoal, pen and ink, and in color; quick sketching; the making of designs for dress embroidery and for costumes which may be reproduced in materials in the Domestic Art Department; a study of designs as found in lace, textiles, and embroidery; a short survey of the History of Costume, including comparisons with present day fashions. Individuality in dress is considered; cost and quality of materials estimated.

#### **Course V. Home Furnishing and Decoration**

This course takes up the problem of the decoration and furnishing of the entire house. It deals with color schemes, cost of materials, kinds of materials used, economic and artistic values, and estimates for specific problems; visits to decorating shops will be included.

### **DOMESTIC SCIENCE (Cookery)**

A systematic study is made of the production and manufacture of food materials, their wholesomeness and digestibility, nutritive value and cost; at the same time, training is given constantly in neatness, order, foresight, and personal responsibility. The students work individually and in groups; in this way independence is developed, and a spirit of mutual helpfulness is fostered. The subject is closely correlated with all the sciences.

The special aims are to teach: (a) The scientific principles underlying food preparation; (b) skill in manipulation of utensils and food materials; (c) attractive preparation and serving of simple meals; (d) scientific accuracy in measurements and work; (e) the essentials in the selection and purchase of all materials for the home.

Throughout all the work the great aim is to develop the power of logical thought, a high ideal of the dignity of labor, and the ability to apply the scientific principles to the problems of every day life.

### IN INTERMEDIATE SCHOOLS

Time: Two forty minute periods a week.

#### **B7:**

General instructions in order, neatness, methods of cleaning, use and care of utensils, care of wood, gas and alcohol ranges and hot plates, different fuels and value of each.

In connection with each food studied, emphasis is laid upon food value, digestibility, method of serving, proper combinations, and cost.

Study of water, fresh and dried fruits, sugar, starch, cereals, vegetables, and beverages.

#### **A7:**

General Topic—Protein Foods.

Eggs: Classification, method of cookery, food value, combination, uses.

Milk: By-products, food value and combinations.

Meat: Varieties, cuts, prices, uses, methods of cookery, food value.

Fish: Common native varieties, preparation, food value, cost, methods of cookery.

Vegetable protein: Studies in beans, peas and lentils.

Time: Two forty minute periods a week.

#### **B8:**

Laundry Work: Soaps, bluing, soft and hard water, starching, removing stains.

Leavening agents experiments, wheat and flour experiments, batters and doughs, sequence of quick batters and doughs.

Special work in division of recipes.

#### **A8:**

Marmalade making.

Study of yeast, yeast breads, salads, desserts, practical work in menus, and preparation and serving of simple meals.

Special attention to combinations and cost.

**INTERMEDIATE SCHOOLS****B9:**

General review of work done in the grades along the following lines with further elaboration of food classification; continued study of principle of cookery and the object in cooking; food values as related both to the body and to market values.

This review is to be in the main no repetition of previous work, but an enlargement upon, and a steady growth in knowledge of the same, brought about through parallel and more difficult lessons in the planning of which a broadening aim must always be in mind.

**I. Study of Carbohydrates:**

1. Sugars—Fruits.
2. Starches:
  - a. Vegetables
  - b. Cereals
  - c. Flour Mixtures

**II. Salads.****III. Beverages:****1. Sugars:**

Relation of sugars to starch.  
Source, manufacture, food value.  
Effect of various degrees of heat upon sugar.  
Fermentation.  
Cost in relation to food value.  
Preparation and serving of sugar dishes,  
frozen desserts.

**Fruits:**

Food value, preparation, care of, preservation  
(canning, jelly making, marmalades, etc.)

**2. Starches:****a. Vegetables:**

Classification, cost, care of, preparation, methods of and reasons for cooking, digestibility, nutritive value and combination with other food; proper serving.

**b. Cereals:**

Methods of cooking and of re-cooking, proper combination and serving.

**c. Flour Mixtures:**

Kinds and manufacture of flour.

Kinds, sources, and use of leavens.

Batters and doughs.

Practice in methods of cooking.

**II. Salads:**

Kinds, dressings, requirements for a good salad, serving, place in menu.

**III. Beverages:**

Classified as refreshing, stimulating, and nutritive.

**A9:**

**I. Proteins:**

1. Milk and milk products.
2. Eggs
3. Meats.
4. Gelatine.
5. Fish.
6. Poultry.

**II. Fats and Oils.**

**III. Menus.**

**Proteins:**

1. **Milk;** composition, digestibility, food value, use, sterilization. Products of milk; cream, butter, cheese. Preparation of milk and cheese dishes.

2. **Eggs;** composition, food value, use, preservation, tests for freshness, methods of cooking and serving.

3. **Meats;** composition, source, use in body, market appearance, cost, methods of cooking and of re-cooking.

4. **Gelatine;** source, composition, method of using.

5. **Fish;** classification as fish proper and as crustaceans. Composition, structure, and selection according to season. Preparation of fish dishes and of dishes in combination with other foods. Correct place in menu and serving.

6. **Poultry;** selection, preparation, and serving of same.

**II. Fats and Oils;** source, composition, digestibility and preservation. Method of cooking in fat.

**III. Menus;** food combinations, necessity for varied diet. Planning, estimating cost of and the serving of plain menus for which the pupils do the marketing, prepare the food, or act in the capacity of hostess.

### IN HIGH SCHOOLS

The following courses furnish a general outline for the work, but they vary according to the conditions of the different schools. In the High School domestic science is taught in the tenth and twelfth years.

Special attention is given to food combinations, to correct service, and marketing with reference to cost of material and return in food value. There is a careful study of the processes of fermentation as related to fruit preservation and bread making. Emphasis is laid upon the proper preparation and best methods of serving food to the sick and to special diet needed in certain diseases.

Time: Five double periods a week.

#### B10:

- I. Fruits: Canning, preserving, pickling, and jelly making.
- II. Carbohydrates: Composition, source, manufacture, nutritive value, digestibility, cost, methods of cooking.
  - a. Vegetables.
  - b. Cereals.
  - c. Sugar.
- III. Protein Foods:
  1. Milk: Composition, food value, use, adulterations, sterilization, and preservation; products of milk, cream, butter, cheese.
  2. Eggs: Composition, food value, use, preservation, methods of cooking.
  3. Combinations of milk and eggs.
  4. Meat: Composition, structure, use in body, source, kinds, division into beef, pork, mutton, poultry, game; drawings of animals, showing location of cuts and cost; methods of cooking (including made-overs), carving.  
Fish: Composition, market appearance.  
Shell Fish: Methods of cooking and serving; visit market.
  5. Soups.
  6. Gelatine: Source, commercial preparations, food value, making gelatine preparations.
- IV. Batters and Doughs:
  1. Flour: Various kinds, composition, spring and winter wheats; visit flour mills.

2. Effect of leavening agents; effect of heat on the mixtures; practical work illustration; pop-overs, waffles, muffins, plain cakes, biscuits.
3. Bread and rolls; Action of yeast, conditions affecting growth fermentation, changes in baking, bread as a food, cost, economy in use of bread, bread making, plain and fancy breads.

**V. Salads.**

1. Vegetable, meat and fruit.
2. Value in the diet.
3. Cost.
4. Dressings; Mayonnaise, boiled, French.

**VI. Table Service.**

**A10:**

- I. Pastry:  
Cake: Loaf, layer, fillings and icings.
- II. Desserts.
- III. Planning and serving of lunches and dinners.
- IV. Invalid Cookery.
  1. Beverages; acid, starchy, albuminous.
  2. Gruels and mushes.
  3. Beef tea and extract; balls.
  4. Milk; peptonized, pasteurized, modified.
  5. Eggs; coddled, egg-in-nest, egg-nog.
  6. Sandwiches.
  7. Custards.
  8. Creams.
  9. Junket.
  10. Jellies, gelatine.
  11. Ices and ice cream.

**V. Home Nursing and Emergencies.**

Aim: To give instruction in simple emergencies and first aid; caring for the sick when the services of a professional nurse are not required; the care of and food for babies, children and the aged.

The scope of the work includes the following topics:  
 Sick room; location, furnishing, ventilation, care.  
 Circulation, respiration, temperature.  
 Personal care; skin, hair, teeth, bath.  
 Making beds; changing linen.  
 General directions for rendering first aid.  
 Making bandages, compresses, poultices.  
 Burns and scalds, including burns from electricity.

Treatment for cuts and bruises, hemorrhages.  
Treatments for simple complaints; earache, toothache, cramps.  
Treatments for electric shocks, drowning.  
Symptoms of and treatment for fainting, epilepsy, apoplexy.  
Symptoms of and treatment for common infections, diseases of childhood.  
Care and feeding of babies.  
Disinfectants.

**B12:**

Special emphasis is placed upon the study of dietaries under different conditions, estimating cost of different menus.

This includes:

1. Balanced diet.
2. Advanced cookery.
3. Serving meals for stipulated sum.
4. Chafing dish cookery.
5. Field work (visits to bakeries, dairies, factories, etc.)

**A12:**

The aim of the last semester is devoted to the following subjects concerning the house:

I. Sanitation:

1. Soil and location.
2. Planning the house.
3. Furnishing.
4. Drainage and plumbing.
5. Lighting.
6. Heating.
7. Ventilation.
8. Water Supply.
9. Wastes of the house.

II. Cost and equipment of kitchen and dining room.  
Drawings.

III. Care of the Home.

1. Cleaning.
2. Cleaning materials.

IV. Maintenance.

1. Apportionment of income.
2. Household accounts.

### Special Course on the Home

Consumption of the income, rather than production, is the division of economics pertaining to the household and the woman; therefore this course is offered to train the girl in her part of the household and civic work. It amplifies the material furnished in other courses touching upon the subject. It aims to supply scientific knowledge of the underlying principles of home making and housekeeping through the study of architecture, artistic and hygienic furnishing, sanitation, buying, and practical management.

The girl is taught to estimate values; to decrease expenditure by wise selection and use of materials; to study the methods by which the home can be made wholesome with the least possible expenditure of energy, material, time, and money.

#### First Semester:

- I. House Selection; renting, buying, or building.  
Sanitation, heating, lighting, drainage, location.  
Plumbing, proportionate costs.  
Plan drawn by each student.
- II. Architecture.
- III. Furnishing and Decoration.  
Period furnishing, laws of harmony, and materials.  
Color scheme for house by each student.

#### Second Semester:

- I. Home Economics.  
Typical budgets of expenses.  
Marketing; accounts.
- II. Household Management.  
Cleaning, routine of household work.
- III. Standards of Living.  
Servant question, pure food laws, weights and measures.
- IV. Laundry.
  - a. Chemistry of laundry materials.
  - b. Detergents.
  - c. Washing and ironing; cotton, linen, silk, wool, fancy materials.
  - d. Removal of stains.
  - e. Dry cleaning.



### Domestic Nursing

The purpose of a course in domestic nursing is to give a practical knowledge of the care of the sick in the home in cases where trained nurses are unnecessary or are not available, and to enable one to understand and intelligently carry out the physician's orders. It in no way attempts to replace a hospital course for trained nurses.

It deals with the care of patients with the various acute diseases, convalescents, nervous patients and chronic invalids. Special attention is given to the care of infants and children, in health, as well as in disease.

One year of physiology (five periods per week) and one year of hygiene (one period per week) are prerequisites for this course. The course in domestic nursing is given one period a day, five days a week throughout the school year and consists of lectures, recitations, and laboratory work with practical demonstrations and practice. A text book, such as Nursing, Isabel Hampton Robb, is followed and reference books are used freely.

The work covers:

1. The care and hygiene of the sick room; cleanliness, ventilation, temperature, light, and the disposal of excreta; the disinfection of rooms, furniture, linen, clothing, and vessels.
2. Practice in the best methods of bed making for the various patients with the manner of changing sheets, pillows and patient's linen; the proper airing of the room, bed and bedding, and protecting the patient from draughts; the uses of appliances and contrivances for the relief and comfort of the patient; lifting, moving and assisting the patient.
3. The taking of the temperature and counting the pulse and respirations; and training in observing, reporting and recording symptoms and conditions.
4. The methods of bathing a patient in bed and assisting with the bath of the convalescent; the care of the hair, nails, mouth, and skin; the prevention and care of bed sores and giving the simpler baths used as therapeutic agents as well as those for cleanliness.
5. The preparation and administration of food and its importance in regard to the needs of the patient; the various methods of giving medicine and the kinds, preparation and methods of administering enemata.

6. The preparation and uses of disinfectant solutions and deodorizers; the administration of external applications, dry heat, such as hot water bags, hot bottles, salt bags, and flannels; moist heat, such as poultices, compresses and lotions; the application of cold and of counter-irritants such as cupping, mustard plasters and liniments.

7. The important points concerning the more common diseases and the means of prevention as well as the general line of treatment.

8. Practice in bandaging.

9. First aid, considering such emergencies as injuries, burns, foreign bodies in the eye, hemorrhages, fainting, sprains, fractures, wounds, drowning, convulsions, and poisoning.

10. The pre-natal and post-natal influence of the child; the physiological peculiarities and the tendency to disease in infancy; the consideration of the causes and prevention of diseases and the high mortality of children; the care of the healthy infant and child as well as the sick in regard to handling, bathing, feeding, clothing, sleep, exercise and fresh air; the consideration of best conditions and habits for the normal development of children into physically, mentally, and morally strong men and women for the betterment of the race and of eugenics.

## ANCIENT LANGUAGE

### LATIN

#### Purpose:

It is the firm belief of most thinking men who have studied Latin that the mental discipline acquired in that study is unique, and is of incalculable value. Grammatical study, says Lord Morley, teaches "habits of accurate distinction which mark the difference between slovenly and orderly minds." Translating is a strenuous intellectual exercise. It involves the mastery of the thought in the Latin dress and the reclothing of it in a form so different as English. Latin is the mother of languages. Even a slight knowledge of the tongue gives one an insight otherwise unattainable into the principles and the processes of language growth. The light thus thrown upon the derivation and meaning of a great many English words is of the greatest practical value. Furthermore Latin is the language of government, learning and

religion until modern times, the language of the world-conquerors and world-civilizers of ancient times, the main channel through which the great intellectual possessions of the ancient world were transmitted to us. Some sense of these great facts is borne in upon the consciousness even of the beginner in Latin, enlarging mightily his mental horizon. Moreover, the student of Latin studies one of the world's great literatures, with its own peculiar elements of dignity and power. Our age with its excessive individualism, with its extravagance and exuberance, needs the corrective of the classical ideal. Restrained, self-conscious, clear-eyed, conservative, it is loyal to what has been proven good, with its profound sense of duty and its keen sense of solidarity.

The immediate aim in the study of Latin is to enable the pupil to read the Latin authors of the course with intelligent appreciation and to gain some comprehension of Roman life. In the attainment of these ends the various other benefits derived from the study of Latin are necessarily involved.

Latin may be begun in the 7th grade in the Intermediate Schools. From the examination of the words detailed from each term it will appear that the work is graded to suit the age of the pupil and that the work is made as practical as possible in its bearing on grammar, sentence structure, and derivation of words.

The work of the last year of the Intermediate School aims to review the first year's work of the High School and to cover as nearly as possible that of the second year in the High School.

The first year's work is devoted to a thorough mastery of forms and of the simpler constructions, to the acquisition of a vocabulary and to the reading of simple Latin. At the beginning of the second year the pupils are taught to apply this knowledge further in the translation of Caesar. Emphasis is laid upon the frequently recurring constructions common in Cicero which occur rarely or never in Caesar. These are carefully studied in the third year as the student meets them. In the fourth year the structure of the hexameter is studied and considerable attention is given to the metrical reading of the Latin. However, in both of the last two years the amount of time and attention which must be given to grammatical details is much less than in the earlier years, and there is therefore more opportunity for study of the thought and the literary qualities of the author read.

Throughout the course much attention is given to the acquisition of a good working vocabulary, to oral reading, to translation at sight and to composition in Latin.

### In Intermediate Schools

Nuttings Latin Primer I XXV.

#### B7:

##### I. Oral Work.

- a. Conversation.
- b. Reading of sentences, etc.
- c. Drill on forms.

##### II. Forms.

- a. Nouns and adjectives.
  1. First and second declension.
- b. Verbs.
  1. Second conjugation.
- a. Active voice.
  1. Indicative: Present, future, perfect.
  2. Subjunctive: Present, imperfect, pluperfect
- c. Pronouns.
  1. Ego, tu.
- d. Numbers to 20.

##### III. Syntax.

- a. Rules for agreement.
  1. Nouns and adjectives.
  2. Nouns and verbs.
- b. Uses of the cases.
  1. Nominative—subject.
  2. Genitive—possessive.
  3. Dative—person to whom something is said or given.
  4. Accusative—object.
  5. Ablative—used with certain prepositions.
- c. Simple uses of the subjunctive.
  1. Purpose clause with ut.
  2. Cum circumstantial.

#### A7:

Nutting's Latin Primer XXV I.

1. Oral work as in B7.
2. Forms.
  - a. Nouns and adjectives.
    1. Third declension.

- b. Pronouns.
  - 1. Is, ea, id.
  - 2. Qui, quae, quod.
- c. Verbs.
  - 1. First conjugation, active voice, indicative and subjunctive moods.
  - 2. Second conjugation, active voice, indicative and subjunctive moods.
  - 3. Third conjugation, active voice, indicative and subjunctive moods.
  - 4. Irregular verbs, eo, ferro, volo, nolo, malo, possum.
  - 5. Principal parts.
- c. Numbers to 100.
- 3. Syntax.
  - a. Ablative of means.
  - b. Hortatory subjunctive.
  - c. Accusative of extent of time and space.

**B8:**

- Nutting's Latin Primer 1 to end.
- 1. Oral work.
  - 2. Forms.
    - a. Nouns.
      - 1. Fourth and fifth declension.
      - 2. Pronouns.
        - a. Demonstrative.
        - b. Interrogative.
        - c. Reflexive.
  - 3. Adjectives and adverbs.
    - a. Comparison.
  - 4. Verbs.
    - a. Imperative of all conjugations.
    - b. Passive voice of all conjugations.
    - c. Deponent verbs.
    - d. Participle.
  - 3. Syntax.
    - a. Agreement of pronouns.
    - b. Negative command.
    - c. Ablative of agent.
    - d. Direct discourse.
    - e. Ablative absolute.
    - f. Simple conditional sentences.

**A8:**

1. Oral work.
2. Easy selections to be read.
3. Easy English to be translated into Latin.
4. General review of forms and syntax in connection with reading.
5. Talks illustrative of Roman life and customs.

**B9:**

1. Reading of Caesar or other selections of equal difficulty.
2. Review of syntax.
3. Principal parts of verbs.
4. Composition.

**A9:**

1. Continuation of B9.

**B9:**

Moulton's Introductory Latin through Lesson 32.

**A9:**

Moulton's Introductory Latin completed.

**B10:**

Moulton's Introductory Latin reviewed.

Towle & Jenks' Caesar's Gallic War, Book I, Chapters 1-41.

Baker & Inglis' Latin Prose Composition, Part I, Lessons 1-14.

**A10:**

Towle & Jenks' Caesar's Gallic War, remainder of Book I. and Book II., and selections from remaining books.

Baker & Inglis' Latin and Prose Composition, Part I, Lessons 15-28.

Sight reading from the remaining books.

**B11:**

Allen & Greenough's Cicero's Orations and Letters.

Catilinarian Orations.

Allen & Greenough's Latin Grammar.

Baker & Inglis' Latin Prose Composition, Part II, Lessons 1-13.

**A11:**

Cicero—Pro Archia Poeta, De Imperio Gnaei Pompei, Letters. Terence' Thormico.

Baker & Inglis' Latin Prose Composition, Part II, Lessons 14-26.

Sight reading from the other orations.

**B12:**

Greenough & Kittredge's Vergil-Aeneid, Books I, II, and III, 1-250.

Baker & Inglis' Latin Prose Composition, Part III. Prosody.

Sight reading.

**A12:**

Aeneid, Books III to VI, inclusive.

Baker & Inglis' Latin Prose Composition. Part III.

Sight reading.

### GREEK

Aims and methods similar to those described in Latin Course prevail in the Greek course. However, the Greek language is a more perfect instrument for the expression of thought than the Latin, and Greek literature is nobler and more varied than Latin, as the Greek people were more gifted than the Romans. The high school pupil is able to appreciate, more fully than is sometimes thought, the remarkable capabilities and beauties of the Greek language, its extraordinary flexibility and fitness for expressing fine distinctions and shades of thought; and such consummate works of art as the Anabasis and the Iliad do not appeal to him in vain. When we remember how large an influence the Greek masterpieces have exerted upon English literature and how large an inheritance modern life and thought have received from the Greeks, we surely cannot deny to the study of Greek a high place in our courses of education.

#### Outline of Greek Course

**B10:**

White's First Greek Book.

Mastery of Grammatical forms, inflections and the simple principles of Syntax.

**A10:**

White's First Greek Book completed.

**B11:**

Anabasis, Book I. Reading at sight. Pearson's Prose Composition. Goodwin's Greek Grammar.

**A11:**

Anabasis, Books II., III. and IV. Pearson's Prose Composition.

Sight reading. Goodwin's Greek Grammar.

**B12:**

Iliad, Books I., II. and III. Structure of Homeric Hexameter.

Prose Composition.

**A12:**

Iliad, Book VI. and selections from the later books. Composition. Sight reading.

Anabasis, Book V.

### MODERN FOREIGN LANGUAGES

The study of Modern Foreign Languages is gaining in importance every year. With improved and cheaper means of travel and transportation, there is felt an increased interest in other lands, languages, and peoples. If the modern business or professional man, investigator, artist or writer hopes to keep abreast of the times the study of one or more Modern Foreign Languages is imperative.

**Purpose:**

The purpose of the study of a modern language is to give the pupil a command of the language in speaking, reading and writing; to make him familiar with the land, customs and people of the language which he is studying; to introduce him to its literature; and to create in the pupil such a sympathetic interest in his Foreign Language that will make it a means of profit and pleasure his life long.

**Scope:**

German, French or Spanish may be begun at any time demanded by the course pursued. A student who has completed three years' course in the Intermediate School may continue his foreign language for two more years in the High School. The High School course extends throughout four years.



**General Methods:**

**Pronunciation:** The ability to pronounce clearly and correctly is of such importance, that great stress should be placed upon pronunciation, not merely during the first few weeks of study, but throughout the entire course. It is necessary that the teacher have a knowledge of phonetic principles, so that the presentation of the new sounds be physiologically correct; and constant watchfulness should be exercised to prevent the formation of careless habits.

**Conversation:** The foreign language should be as far as possible the language of the class room. At first simple questions are based upon reading matter, pictures, maps, or objects; later, the pupil is asked to interpret words and phrases, to retell stories and anecdotes, and finally to describe the characters and discuss the contents of the literature read. The work on conversation should be carefully graded so that the pupil may pass easily from simple to complex sentences, and may speak with increasing vocabulary and use of the idiom. Conversation based upon the reading matter is the chief mode of instruction.

**Reading and Translation:** The first year the teacher should read and study over the new lesson with the pupils, who gradually will become more independent as they gain in power of expression. Translation should be used to clear up difficult passages rather than to test the knowledge of the pupil. From time to time written translation may be assigned as home work, and then the teacher must insist not only upon a good choice of words but also upon clear and idiomatic English.

**Grammar:** Grammatical principles should be learned from material that the pupil has studied and thoroughly understands. Case endings and verb forms are learned in complete sentences. The sentence, not the word, should be the basis for grammatical drill. In order to insure greater accuracy in speaking and writing, grammar is systematically studied throughout the course.

**Composition:** During the first two years written exercises are to be based upon material that the pupil has read and discussed. Later the composition book is supplemented by original theme and letter writing, and International Correspondence is highly recommended to add interest to the advanced work. In written as well as in oral composition care should be taken that the work is not beyond the power of the stu-

dent. It is better to cover more ground with comparatively easy subject matter, where accuracy and fluency are possible, than to discourage the pupil with material that is too difficult.

The watchword for all beginning classes should be, "Make haste slowly." The pupil's success depends largely upon the work of the first three weeks. During this time he must gain an interest in his work, confidence in himself, and respect for accuracy.

### German

No other foreign language has a richer and more varied literature than the German, and no other modern nation has accomplished so much in the fields of science, music and art. But the Germany of today is also a practical nation. Her scientists and tradesmen are developing every natural resource and are making Germany the rival of England for the trade of the world.

German can hardly be called a foreign language by those who call English their mother tongue. The older and more forceful part of the English language is Germanic, and the close relation between the two languages not only helps the student to acquire German but also adds to the value, interest, and charm of his work.

### In Intermediate Schools

#### B7:

Pronunciation is taught largely by imitation. There is much oral work in connection with pictures and objects within the school-room. The material in the reader is developed orally by the teacher. Questions and answers by both teacher and pupils serve to fix the vocabulary and sentence structure. The memorizing of songs and simple poems is an important part of the work. No formal lessons in grammar are attempted, but the following points are developed inductively from conversational and reading material: Declension of articles and nouns; present, past, and indicative of verbs; the inverted order. Dramatization. Script. Written work consists of simple sentences copied and written later from memory, answers to questions, and the filling out of blanks.

#### A7:

Continuation of the work of the first semester. The following grammatical points are developed: Declension of nouns and pronouns; use of the common prepositions with the dative and the accusative. Conjugation of verbs in present and perfect tenses.

**B8:**

Oral work is still the most important part of the instruction. The stories read are retold and dramatized. Poems are memorized. There should be a constant review of the grammatical principles learned, and the following new points are developed; the common preposition with the dative or accusative; conjugation of weak and of the most common strong verbs in the active indicative; written work consisting of sentences and paragraphs based on the conversational lesson and illustrating the grammatical points studied.

**A8:**

Work similar to that of the B8. Conversation, dramatization and memorizing poems, the grammar work not included: Strong verbs in the active indicative; subjunctive forms which are used in ordinary conversation; word order is further developed; omission of "wenn" and "dass."

**B9, A9:**

The work of the last year of the Intermediate School aims to review the first year's work of the High School and to cover as nearly as possible that of the second year in the High School.

**In High Schools****B9:**

Pronunciation is taught with great care. The Rausch Sound charts are found helpful to insure accuracy. Oral work is based upon pictures, maps, and objects, as well as upon the text material. Pupils must use the language as much as possible from the beginning. Grammar is taught inductively from the reading material. Written work should be required only in sentences that have been recited orally. German script.

**A9:**

Review of the first principles of Grammar. Conversation is based largely upon the material in the reader. From time to time the teacher should read aloud to the pupils easy stories and anecdotes.

**B10:**

At least one short story is studied thoroughly. A mastery of forms is now insisted upon. The work is based largely upon the reading material.

**A10:**

At least one story and one play are read. Scenes are memorized and given. During this semester there is much oral and written drill with simple sentences illustrating the subjunctive and the conditional. Review of the essentials of grammar.

**B11:**

By this time the pupil should have sufficient command of the language to be able to express himself easily on ordinary topics and to be able to write correctly simple German. A drama and one prose work are carefully studied. The pupil should also learn something about the authors studied, and memorize scenes from plays, or poems. Grammar is reviewed by topics and a formal composition book is used. Each pupil is required to read privately and review at least two books of some thirty pages each.

**A11:**

One drama and one prose work are studied as in B11. Conversation should now be directed toward developing a literary appreciation for the works read. Composition consists of description, letters, character sketches, and reviews of chapters from the reading material. Pope's composition is completed to Part II. Two book reviews are required on private reading.

**B12:**

Work is similar in method to that of the third year. Students are urged to do considerable private reading. International Correspondence is recommended to add interest to written work. Talks in German are given on the lives of the authors studied and on German Literature.

**A12:**

A study is made of one classical drama, in connection with which the attention of the pupil is especially directed toward the development of the plot, characters and motives. One prose selection is read rapidly at the end of the semester. Pope's Composition is completed and themes are required.

The work is carried on entirely in German. Students are urged to subscribe for some good German newspaper or magazine and to feel that their German is a necessary part of their aesthetic and intellectual life.

**French**

The instruction in French does not differ materially from the method explained in the general methods for modern Foreign Languages, with the exception that the acknowledged difficulty of French pronunciation necessitates phonetic drill. Probably no other modern language suffers so much from faulty pronunciation as the French, and every effort is used to insist upon clearness and correctness of enunciation.

**B7:****I. Easy Conversation, with the aid of pictures and charts.****Topics for conversation:**

1. Parts of the body.
2. The house, names of the rooms and common articles of furniture, bringing in the dining table and its accessories, and common articles of food in connection with the study of the dining room and kitchen.
3. The class room.
4. The garden, trees, flowers, fruits, and vegetables.
5. The family.
6. A few idioms, and polite expressions.

**II. Dramatization and games.****III. Memory work with easy poems.****IV. French alphabet; spelling in French.****V. Ordinals and cardinals to 100.****VI. Verbs: Present indicative of avoir, etre, aller, faire, manger, voir, prendre.**

Present indicative of three conjugations, and the past indefinite of the first conjugation.

**VII. Adjectives. Demonstrative and possessive adjectives.**

A few descriptive adjectives.

**VIII. Primary uses of the partitive.****IX. Divisions of time.****A7:**

Begin the study of Mansion's "A First Year of French."

**I. Drill in conversation and simple dictation.****Topics for conversation:**

1. Names of animals.
2. The town, street, grocery store, and dry goods store. Use charts and pictures as aids in conversation. Dramatize when possible.

- II. Memorize simple poems.
- III. Verbs: Imperfect, Preterit, Future and Conditional Indicative of the three conjugations.
- IV. Regular comparison of adjectives.
- V. Possessive pronouns.

**B8:**

Reader, "Contes et Legendes," Guerber.

- I. Review all tenses of the Indicative mood and learn the derivation of tenses from the principal parts.  
Compound tenses and imperative.  
Continue Mansion's "A First Year of French."
- II. General review of adjectives. Irregular comparison of adjectives.
- III. Object Pronouns.
- IV. Drill in conversation on topics in review. Introduce Geography topics, and in this connection, a voyage, using maps and charts. Oral and written reproduction of stories in the Reader.
- V. Complete paradigm of regular verbs, and common irregular verbs, savoir, pouvoir, devoir, venir, aller, faire, écrire, lire, etc.

**A8:**

Reader, "Contes et Legendes," Guerber.

- 1. Reading, dictation, and conversation, oral and written reproduction of stories in "Contes et Legendes," and reproduction of supplementary reading from history stories and simple poems. Dramatization.
- II. Rapid review of verb forms.  
Impersonal verbs such as pleuvoir, falloir. Base verb drill on texts read.

**B9:**

Chardenal's Complete French Course.

- Conversation involving particular care and discrimination in the use of tenses, and idioms.  
Dramatization.  
Reproduction of stories illustrating French life.  
Dictation.  
"Lectures Faciles," Bruce.  
"Contes Bleus," Labonlaye.  
"Tour de la France," Bruno.

**A9:**

Continue Chardenal's Complete French Course.  
Conversation and Dictation.

Letter writing, reading and reproduction, oral and written, of selections from best French literature.

More advanced work in dictation.

"Sans Famille," Malot. -

"La Cigale Chez les Fourmis," Labiche.

"La Tache du Petit Pierre," Mairat.

The work of the last year of the Intermediate School aims to review the first year's work of the High School and to cover as nearly as possible that of the second year in the High School.

### In High Schools

#### B9:

In addition to the preliminary drill in pronunciation, the elements of grammar are studied, not including, however, the personal pronouns, subjunctives and irregular verbs, the consideration of which is left until the following term. Much practice in these elementary grammatical forms is given by means of questions and answers, and the formation of simple connected sentences, based on the vocabulary of the grammar and also on the texts read. The oral drill is always followed by written exercises illustrating the same grammatical points.

#### A9:

The work of the first term is continued, and the elements of grammar are completed, giving a wider knowledge of verb forms and constructions. A simple connected narrative is read, which forms the basis for conversation and for composition work. Translation is limited almost entirely to difficult passages, and to sight translation.

#### B10:

In this term the pupil begins a book in composition, which enables him to review the fundamental grammatical principles, and also adds considerably to his practical vocabulary and knowledge of idioms. He reads a short French play, which introduces him more directly to French conversation and life. In addition to question and answer, or oral reproduction of prepared texts, further material for conversation is found in a Pictorial French Course.

#### A10:

The work in prose composition is continued, and is varied by the occasional writing of narratives, anecdotes or letters. One or more standard French novels is read carefully and discussed in French by the class. The authors are considered

in relation to French literature, and reports are given in French upon their life and work.

**B11:**

The pupil begins the study and reproduction of more difficult idioms in Francois, Advanced Prose Composition. He now has an opportunity to read and discuss the masterpieces of Hugo and Daudet. From now on, an additional book is read outside of class each term and a review of the book is presented.

**A11:**

In this grade the student reads a classic of Moliere, and also a play of the modern author, Rostand. Reports from French journals and newspapers on topics of interest are given in the class. The composition work is similar to that of the preceding term.

**B12:**

In this grade is begun a history of French literature which enables the student to get a general view of its development, also to find the place and relations of the authors he has studied. The composition is based on subjects suggested by the reading or by the life of the pupil.

**A12:**

The work of this grade is in almost every respect a continuation of the work of the preceding grade.

### **Spanish**

The general statement of the purpose of foreign language instruction applies well to Spanish; but in Southern California a unique purpose is apparent in the study of Spanish.

The Jesuits, the first explorers and settlers on the Pacific Coast, established a Spanish civilization whose traces can never be effaced; for it will always live in the geographical names prevalent here, and in the picturesque missions so carefully preserved. Some of the old-time customs are still adhered to by the descendants of the original Spanish families; and the "rodeo" or the "fiesta" often remind the present generation of the Spanish life of earlier days. The influence and charm of Spanish culture is to be felt even at this time.

Furthermore, our proximity to Mexico and the countries of South America, the near completion of the Panama Canal, the rapid increase in commercial relations existing between



these countries and the United States, make Spanish useful as a means of communication for business purposes. For these reasons we aim to familiarize students with the culture side and the commercial side of the Spanish Language.

### In Intermediate Schools

#### B7:

##### I. Subjects for Conversation.

1. School: 1, yard; 2, building; 3, one room; 4, persons.
2. House: 1, furnishings; 2, foods and dishes.
3. Family: 1, members; 2, everyday expressions; 3, polite expressions.
4. Body: 1, parts of; 2, common sentences concerning.
5. Days.
6. Dates.
7. Months.

##### II. Grammar.

1. 20 incidental adjectives, adverbs, prepositions.
2. 20 verbs, present tense.

#### A7:

##### I. Subjects for Conversation.

1. Stores.
2. Streets: 1, parts of; 2, buildings; 3, vehicles.
3. Out of Doors.
4. Animals.
5. Clothing.
6. Sewing.

##### II. Grammar.

1. About 50 phrases, adjectives, adverbs, etc.
2. 40 verbs, Present and Past with Haber.

##### III. Reading.

1. Worman's First Reader (1st 10 lessons).

#### B8:

##### I. Subjects for Conversation.

1. Traveling.
2. Tradesmen and Professions.
3. Divisions of Land: 1, geographical; 2, political.

##### II. Grammar.

1. Parts of Speech as required.
2. Verbs: 1, Imperfect Tense; 2, Preterite Tense; 3, Future Tense.

##### III. Worman's First Reader (finished).

**A8:**

- I. Subjects for Conversation.
  - 1. Geography.
  - 2. History of California.
  - 3. Review of Daily Life.
  - 4. Games.
- II. Grammar.
  - 1. Parts of speech and syntax as needed.
  - 2. Verbs, entire indicative mode.
- III. Reading.
  - Fortuna.
- IV. Give five short poems including Ruy Senor.

**B9:**

- I. Grammar.
  - 1. "Introduccion a La Lengua Castellana."
  - 2. Three conjugations, complete.
- II. Reading.
  - 1. Worman's Second Reader.

**A9:**

- I. Subjects for Commercial Spanish:
    - 1. Business Correspondence: (a) Application; (b) Acceptance, etc.
    - 2. Railroading.
    - 3. Shipping.
    - 4. Banking.
    - 5. Mining.(These subjects for general study only.)
  - II. Grammar.
    - 1. Review, including "introduction a La Lengua Castellana."
  - III. Reading.
    - 1. Doce Cuentos Escogidos.
- Recommendation for Supplementary Readers.
- 1. Cyr I. and II.
  - 2. Silver Burdette Co., Libro Tercero de Lecturo.
  - 3. American Book Co., Libro Legundo de Lectura.

**B9, A9:**

The work of the last year of the Intermediate School aims to review the first year's work of the High School and to cover as nearly as possible that of the second year in the High School.

**In High Schools****B9:**

Careful training in phonetics introduces the work. A vocabulary of common and useful words is taught. The pupil's surroundings or daily activities form the source for this vocabulary. Verb forms are limited to the present indicative and imperative. As far as possible the work is visualized, so that the use of English in the class may be avoided as much as possible.

The text book is used at the discretion of the teacher, whenever the need of material for conversation or composition is felt.

Grammatical principles are treated very informally, and the text book is only to suggest to the teacher the amount of work to be done.

**A9:**

The work in vocabulary building is continued by the reading of simple prose, with composition and conversation based on the same. The tenses of the indicative are completed. Many of the most useful irregular verbs are taught. The treatment of the verb in the Marion y Des Garennnes will indicate the scope of this work in verbs.

A few short, simple poems are memorized; if possible, a song is learned.

The work in grammar should continue to be informal, but ought to cover the points of grammar brought out in Marion y Des Garennnes.

**B10:**

The reading material is selected stories from modern Spanish writers. The conversational exercises are based upon this material and upon the geography, natural resources, of Mexico, Cuba, and Puerto Rico.

Selections for memorizing are assigned.

**A10:**

A careful study is made of a longer story.

Conversational exercises, compositions, reproductions and letters form an important part of the work. The countries of South America furnish additional material for conversation and composition.

Selections are assigned for memorizing.

The systematic study of prose composition is continued.

**B11:**

The pupil's acquaintance with ordinary conversational Spanish is extended by the reading of literature introducing Spanish customs and home life. The characteristics of the Spanish people are studied and compared with our own traits. A short sketch of some author's life and works is studied.

Conversational exercises are based upon the reading matter and upon the political organization, administration, commerce, industry and culture of the Spanish nation.

The written work reviews in a general way the oral exercises. Character sketches are given and outlines of certain parts of the reading matter. Especial emphasis is placed upon the writing of business and formal letters.

Systematic study of grammar is begun.

**A11:**

A short biographical sketch of the author is written before taking up the comedy to be studied this term. Pupils discuss the characters and their motives, as well as the development and purpose of the drama.

A novel of great literary value is read, depicting sixteenth century life, and introducing a variety of characters.

The reading material is the basis for conversational exercises. Themes for composition are suggested by the characters, the scenes, the situations; or by the summing up of a scene or an act or of the whole play.

Business and formal letter writing together with the systematic study of grammar is continued.

**B12:**

Some modern Spanish fiction is read during this term. The novel is studied intensively. Each chapter is read, discussed, and summarized. Then the problem as a whole is resolved.

Written work consists of a sketch of the author's life; descriptions of characters of the works read.

Review important principles of grammar. Continue letter writing.

**A12:**

As a climax of the entire course, one of the choicest pieces of Spanish literature, together with one of the best dramas, is read. These furnish plenty of subjects for theme writing.

The biography of Miguel de Cervantes is studied and a sketch of his life is written.

A brief outline of the History of the Spanish language, showing its origin, growth, and relation to other languages is given.

## LIBRARIES

The high and the intermediate schools are provided with libraries which are gradually being improved to fit the needs of the particular schools. In the smaller schools one of the teachers is assigned for part time to the care of the library, but in the larger high schools professionally trained librarians are employed. The libraries are open during school hours, and the one at Polytechnic High is open in the evening as well. The larger libraries contain from 3000 to 7000 volumes, and each receives about 40 periodicals, which are bound and kept on file. Besides using the library for reference reading during school hours, students may draw books for use at home. In the larger schools often 600 pupils make use of the library facilities in a single day.

The libraries try in every way to supplement the work in the classroom, to broaden and intensify it, by collecting material on every subject studied. To this end they prepare lists of reference for History, English, Debating, Oral English, Economics, etc., and make these available to the students. Such references include books, magazines, pictures, pamphlets, encyclopaedias, and all illustrative material, which are kept upon shelves, always accessible to the students. The librarians constantly endeavor to foster the reading habit, and to furnish, besides the collateral reading for the studies, interesting and well written matter which will entertain, instruct, and lead to a love of good literature on the part of the students. They instruct the students in the proper use of books, so that they may use them to the best advantage. To be able to use an encyclopaedia, a dictionary, or an index intelligently, and to understand the simplest methods of library economy, should be a part of the equipment of every student.

Since the progress of invention and manufacturing has made it feasible to use in the school-room pictures projected on a screen, a cabinet of slides covering a wide and varied field of subjects is kept at the Olive Street School for the benefit of any school which desires to use them.

Constant care is exercised to keep the libraries abreast of the times. New material is selected with extreme care, because from the mass of material obtainable only the best

can be taken from the standpoint of economy. Consequently, the librarians must be constantly in touch with the teachers of all departments in order to know their needs, and to profit by their expert knowledge. Thus the ordering of new material is an important function of the librarians as well as the classifying, catalogueing, and attending to the necessary clerical work of the library.

In brief, the librarians of the high schools aim to foster in the student the library habit so that he may use books intelligently, and make the fullest and best use of the public library, that he may all his life have a means of recreation and enjoyment not dependent upon changing seasons, fads, or fortunes.

### **SOME EXPEDIENTS FOR TRAINING IN MORALS AND MANNERS**

The object of the work suggested in this outline is to place before the students some standards of conduct and, by a concerted effort, to encourage improvement in manners and morals.

The scope of the work is purely practical, with no attempt to elucidate the theory or philosophy of right acting.

The instruction is given through informal discussions in small groups in class-rooms supplemented by talks in general assembly.

#### **Morals**

##### **I. Honesty.**

1. Truthfulness.
  - a. Its moral beauty.
  - b. The sure sign of a brave character.
  - c. Absolutely necessary to the maintenance of stable relations in society. Conduct of all business impossible if dishonesty were predominant.
2. Sincerity, as opposed to deceit and flattery, a necessary accompaniment of all friendship.
3. Lying.
  - a. In the matter of excuses, claiming illness as excuse for tardiness or absence, when not ill. An almost necessary outgrowth of this is the forged excuse.
  - b. Inventing excuses for non-preparation of lessons and for failure to conform to time requirements in completing work.

- c. All lying a species of cowardice. The boy or girl is too much of a coward to face the facts and meet the consequence of his conduct.
  - d. A second falsehood is almost a necessary sequel to the first.
  - e. On the other hand a frank confession of wrongdoing is a long step toward restitution. "A sin confessed is half redressed."
- 4. Cheating.
  - a. Unfair to others in class because one appropriates without effort that which has cost the others effort.
  - b. More unfair to oneself because cheating deprives the boy or girl of the chief benefit to be derived from the school, viz.: the opportunity to develop through effort.
  - c. Independence in the acquisition of knowledge the first essential of the real scholar.
- 5. Stealing.
  - a. A discussion of the circumstances which create temptation, such as the desire to possess better clothes than one can afford or the desire to enjoy some pleasure which one cannot afford or of which friends disapprove.
  - b. The importance of a sturdy independence which scorns to appropriate other's belongings and exults in earning one's own way.
  - c. The wrong to others who may suffer greatly from even a small loss, as for instance the theft of a note-book which is due and on which a grade may depend, or the theft of a book at a critical time, as just before a test.
  - d. The duty of all to take care of their belongings so as not to place needless temptation in others' way.
- II. Sympathy.
  - 1. Leads to a broad understanding of others.
  - 2. Fundamental quality for those who wish to be leaders.
- III. Loyalty.
  - 1. To one's family.

Even faults, weaknesses and sins furnish no excuse for failure in loyalty to one's family.

2. To one's friends.  
Friends need help most when they are in trouble.
3. To one's school.
  - a. In protecting its property.
  - b. In supporting its student activities.
  - c. In upholding the good name of the school.
4. To one's city.
  - a. Intelligent and sympathetic interest in its problems and projects. Especially due from those educated in the city's schools.
  - b. Problems peculiarly adapted to elicit interest and co-operation of young, as clean streets, cultivation of vacant lots, etc.
5. To one's country.
  - a. Treatment of the flag.
  - b. The correct thing to do when our national hymns are sung.
  - c. Not closing our eyes to our national shortcomings. Not necessary to advertise those shortcomings.
  - d. The correct interpretation of "My country, right or wrong."
  - e. Loyalty implies active support of public measures.

#### IV. Industry.

1. Value of work.
  - a. In developing body and mind.
  - b. In keeping from wrong ways of acting and thinking.
2. Change of work, not cessation, often the best recreation. Value to the student of changing to out-of-door work or household tasks.
3. Industry is not merely being busy but implies concentration.
  - a. Mental concentration most important to students. Cultivate oblivion of everything save tasks in hand. Importance of learning to study in study room. Possible to gain absolute mental control.
  - b. Importance of methodical division of time so as to approach the same task each day at the same



time and also master the task within the allotted time.

4. Examples of industry and what has come of it. Edison, Roosevelt, etc.
  5. Inspiration of feeling that one has a worthy share in world's work. Excellent suggestions on the topic, especially on concentration, can be found in Arnold Bennett's "How to Live on Twenty-four Hours a Day," and "The Human Machine."
- V. Obedience—The accepting of rightful guidance.
1. Necessary to individual progress, which results from the one who knows, guiding the one who does not know.
  2. Necessary to social progress. Certain principles of conduct and certain lines of procedure recognized as binding on all (customs and laws). From these result orderly communities where life and property are safe and social progress possible.
  3. School communities must submit to rules of guidance in order to accomplish their work. Picture a school where each does as he pleases. Rules should be equally binding on all.
  4. School officers, however, should not be looked upon as the makers and enforcers of rules but as the regulators of school activities to the accomplishment of school tasks.
  5. Self Government implies the intelligent recognition by the individual of the need for rules of conduct (school rules and society requirements) and the voluntary observance of the same. Self Government is the finest manifestation of obedience.

### Manners

#### I. Manners in public.

1. Manners on the street.
  - a. Crowding others off the walk.
  - b. Taking left instead of right side.
  - c. Boisterous laughing and talking.
  - d. Attracting attention by overdress or inappropriate dress.
  - e. Crowding ahead of ladies or older people in taking cars or entering buildings.
  - f. Throwing paper or other litter on the streets.
  - g. Lifting hats, when and to whom.
  - h. Assisting ladies, when and how.

2. Manners on cars.
  - a. Talking of one's private affairs.
  - b. Discussing others and their affairs; discussing school matters.
  - c. Conversation on cars and in all public places should be guarded and impersonal.
  - d. Taking seats while older people stand.
  - e. Chewing gum, eating peanuts on cars and in other public places.
  - f. Interfering in any way with conductor, grip-man, or passenger. (Not to be spoken of unless occasion demands it.)
3. Manners at public gatherings, including Assembly calls.
  - a. Whispering and rattling programs.
  - b. Applauding at the wrong time, for instance, just before the end of a musical selection by which the last notes are lost.
  - c. Carrying on conversation while the orchestra is playing at school assemblies.
  - d. Preparing to leave before program is quite ended.

## II. Student manners.

1. In the halls.
  - a. Loud talking, boisterous laughing, whistling.
  - b. Running, pushing, unnecessary crowding.
  - c. Not good manners for boys to wait about in halls for girls or for girls to wait for boys. School a place for business and not for sentimental meetings between boys and girls.
  - d. Courteous attention to strangers in the halls.
  - e. The proper attitude of boys and girls toward each other, courteous, never familiar.
2. In the class-room.
  - a. Be courteous to teachers in manner of entering and leaving room.
  - b. Be attentive.
  - c. Be responsive.
  - d. Be helpful to teachers in distributing papers, gathering papers, etc.
  - e. In teacher's absence act the part of a gentleman or a lady and not that of a school child.
  - f. Be considerate of mates by listening to

recitation and refraining from laughing at mistakes. Put yourself in the other's place.

**III. Telephone manners.**

1. Be civil to Central.
2. Do not visit on the phone.
3. Limit conversation to reasonable time.
4. Be careful of language used.
5. Talk of no personal matters. It is a mistake to suppose that phones are private. None are absolutely so.
6. Do not discuss others or the business of others. Not safe and not kind.

## MATHEMATICS

The primary aim of instruction in mathematics is to give knowledge and training in the solution of quantitative problems arising in every day life. The practical rather than the theoretical side is emphasized, and stress is placed upon commercial and industrial applications no less than upon mechanical and technical. While the subject is presented mainly with a view to its proximate applications, its ultimate use in advanced work is not lost sight of and foundation materials are so selected and developed that they may as nearly as possible articulate perfectly with work along similar lines to be pursued later in the University or Technical School.

### In Intermediate Schools

**Arithmetic:**

**B7:**

Common and decimal fractions reviewed with much rapid oral work. Percentage with its applications in practical business life, to commission, finding per cent of gain or loss, insurance, taxes and trade discount.

**A7:**

Interest, one method, preferably the "Sixty Day Method," bank discount, forms and measurements, mechanical process of square root.

**B8:**

Applied mathematics—Shop mathematics for boys and household mathematics for girls.

**Algebra:****A8:**

Use of symbols, positive and negative exponents, the four fundamental operations of Algebra.

**B9:**

The standard methods of factoring, particularly the factorization of the general quadratic expression, common factors and multiples, simple equations, synthetic division, fractions.

**A9:**

Various methods of solution of systems of simultaneous equations of the first degree, graphic representation, evolution, and theory of exponents.

**In High School****B9:**

The fundamental operations of Algebra, the standard methods of factoring, particularly the factorization of the general quadratic expression, common factors and multiples, simple equations, synthetic division.

**A9:**

Fractions, various methods of solution of systems of simultaneous equations of the first degree, graphic representation, evolution, and the theory of exponents.

**Geometry.****B10:**

The theorems and constructions usually included in the first two books of elementary geometry, including the general problems of plane rectilinear figures, the circle, and the measurement of angles; the solution of original exercises, including problems in loci.

**A10:**

The theorems and constructions usually included in books III, IV, and V of Elementary Geometry, including the general properties of regular polygons, their construction, perimeters and areas, and the measurement of the circle; the solution of original exercises including problems in mensuration.

**Shop Mathematics:**

The interpretation and application of standard mensuration formulae, abbreviated methods of calculation, the use of mathematical tables, approximation by graphical methods,

and the solution of such practical problems in computation as ordinarily confront the builder, patternmaker, foundryman and machinist.

Five times a week, twenty or forty weeks, depending on the course. Ninth or tenth year.

**Algebra:**

**B11:**

Review of the first year's work, the use of determinants of the second and third order, emphasis on graphic interpretation, roots, radicals, and exponents, quadratic equations, equations involving irrational expressions.

**A11:**

Graphs of quadratics and of complex imaginaries, simultaneous quadratic equations, quadratic theory, logarithms, ratio, proportion, variation, progressions; mathematical induction, binomial theorem for positive integral exponents, limits, infinities.

**Solid Geometry.**

The fundamental propositions of solid and spherical geometry, with problems in demonstration and in the mensuration of surfaces and solids.

Five periods a week, twenty weeks. Eleventh or twelfth year.

**Plane Trigonometry.**

The development of the general formulae of Plane Trigonometry with applications to the solution of triangles and the measurement of heights and distances. Practice in computation with logarithmic tables and use of instruments where practicable.

B11 algebra is prerequisite.

Five periods a week, twenty weeks. Eleventh or twelfth year.

**Mechanics.**

An elementary treatment of the underlying principles of dynamics and statics, illustrated by problems and applications.

Five periods a week, twenty weeks. Twelfth year.

Plane Trigonometry is prerequisite.

### **Strength of Materials.**

An elementary treatment of the strength of materials accompanied by laboratory work.

Five periods a week, twenty weeks. Twelfth or thirteenth year.

Mechanics is prerequisite.

### **Surveying.**

#### **Plane Surveying:**

The theory and adjustments of the various surveying instruments and their practical use in the field. The usual problems of the level, transit and plane table. Problems of considerable extent such as locations of boundary lines, the running of a series of differential levels from San Pedro Harbor, to the High School campus, and a location survey of the harbor. One recitation and two consecutive hours of field practice daily, or one recitation and four consecutive hours of field practice daily, depending on the course; optional field practice on Saturdays.

Forty weeks, twelfth or thirteenth year. Trigonometry is prerequisite.

#### **Railroad Surveying:**

The usual problems of railroad surveying, including the simple, compound, reverse, parabolic, vertical, and spiral curves. Map work.

One recitation and four consecutive hours of field practice daily, optional field practice on Saturdays.

Forty weeks, thirteenth or fourteenth year.

## **ADVANCED MATHEMATICS**

### **Advanced Algebra.**

Part I. Inequalities and limits, exponentials and logarithms, permutations and combinations, binomial theorem for any exponent, expansion of functions in series, convergency of series.

Five periods a week for twenty weeks. Thirteenth or fourteenth year.

Part II. Determinants, rational factors and higher equations, simultaneous equations of higher degrees (graphical methods), solution of numerical equations by Horner's method, relations between roots and coefficients, symmetric functions of roots, complex quantities (graphical method),

binomial equations, derived functions, maxima and minima. Taylor's theorem for algebraic functions, transformation of functions, reciprocal equations, criteria for real roots, Descartes' rule of signs.

**Analytic Geometry:**

The analytic geometry of the straight line, and the conic sections; a discussion of the general equations of the second degree, and some special cases of higher plane curves.

Five periods a week for twenty weeks. Twelfth or thirteenth year.

**Calculus:**

Differential. The fundamental principles and formulae of the differential calculus, and its applications.

Five periods a week, twenty weeks. Thirteenth or fourteenth year.

Integral. The fundamental principles and formulae of the integral calculus, and its applications.

Five periods a week, twenty weeks. Thirteenth or fourteenth year.

**Elements of Analysis:**

Part I. Elimination by determinants, graphical representation, the elements of ovalytic geometry, theory of equations, simple applications of the calculus to problems involving tangents, maxima and minima, simple applications of integration, elementary transcendental functions, the parametric representation of curves, polar co-ordinates, and curvature.

Five times a week, forty weeks. Thirteenth year.

Part II. Functions of two or more variables, analytic geometry of three dimensions, partial differentiation, the integral as a limit of a sum, with its applications, double and triple integration, application to areas and velocities, differentials, series, indeterminate forms, envelopes and some advanced applications of curves.

Fourteenth year, five times a week, forty weeks.

## MECHANIC ARTS

### In Intermediate Schools

It is thought advisable to allow teachers latitude in the selection of technical details and the amount of time pupils should devote to such.

1. **Freedom** within the limits of the problems in the determination of purpose, variation from type, choice of materials, color, and finish of the objects.

2. **Cultivation** of inventive faculties and the faculty of judgment by the realization of possibilities in the working out of form and structural ideas.

3. **Knowledge** of the purpose of the course as well as knowledge of the purpose of each object made in the course.

4. **Interest** in manual training has its origin in the purpose of the object made by the pupil. Interest, therefore, is based on the object's relation to the pupil's life.

Suggested outline of general course in Manual Training in the Intermediate Schools.

#### **B7, A7:**

Elementary furniture making, working drawings, designs.

#### **B8, A8:**

Advanced elementary furniture making, working drawings, design.

#### **B7, A7:**

##### **Practical Mechanical Drawing:**

Design, color study, selection of furnishings; principles of structural design, repose, dignity, strength, wall spacing and decorations occurring in woodwork.

#### **B8, A8:**

Optional for pupils who do not intend going to High School but contemplate vocational work.

Tinsmithing sheet metal work and mechanical drawing particularly related to sheet metal work.

Suggestive outline in Optional Manual Training for boys and girls in Intermediate Schools.

**Metal Work:** Work in hammered brass and copper, etching, design.

**Leather Work,** book binding and portfolio making.

**Tooled leather work,** coloring leather, book and portfolio making, design.



Clay Work and Textile Work; pottery-freehand, tile work, design, rug weaving, stencilling.

Wood Work and Reed Work; wood-carving, furniture-making, ornamental staining, reed work.

### In High Schools

Lecture work forms an important part of the work of the first year in each and every department of the mechanic arts course.

#### Woodworking (one year):

Class demonstrations should form an important feature of the woodworking department.

1. All the different woods made subjects of illustrated lectures with samples of the woods for inspection.
  - a. As to their commercial uses.
  - b. As to their characteristics.
  - c. As to their properties. Hough's "American Woods."
  - d. Veneers; sawed; rotary; sliced.
2. Principles of construction will be taught and illustrated, covering the subjects of joinery, furniture and manufacturing, building and interior finish.
3. Machinery will be made a practical subject of study, including the different kinds, the principles of construction and operation; the various makes, and the methods of transmission of power.
4. Stains will be taught and illustrated in various forms, including water (anilines and other dyes), oil, spirit, and stains caused by chemical changes.
5. Polishes, both by varnish and wax, will be required.
6. Fillers will be made a subject of special study, with special reference to the principles of design and proportion. The subject of "period furniture" will be introduced to create a desire for better designs. Attention will be given to the characteristics of some of the greater designers, such as Hippelurhite, Chippendale, Shereaton, etc. Prominence given to Flemish and Colonial designs.
7. Particular study given to commercial furniture designing.
8. A working and familiar knowledge of tools, including their names, both as a whole and in parts, the princi-

ples of cutting tools, and a complete demonstration of all tools used.

**Work in Joinery:**

Toe-nailed joint  
Housed or gain joint  
Half-lap  
Blind Mortise—and tenon  
Thru Mortise—and tenon  
Dove-tail halving  
Thru multiple dove-tail  
Dowel-joint  
Panel construction  
Cabinet construction  
Principles of veneer

**Machinery.**

1. Realizing the danger incident to the use of machinery by inexperienced hands, special precautions will be taken to prevent accidents from the use of short pieces in the circular saw, the jointer, the surface planer, sawing round stock in band saw, backing work out of band saw, discouraging the use of machinery for trivial operations, and guarding against the danger of catching clothing in lathe.
2. Special instruction will be given to the principles involved in the use of such machines as the jointer, circular saw and planer, with special reference to parallel finish and plane surface.
3. Lectures will be given explaining the principles of construction and operation of such machines as the circular saw, band saw, jointer, planer, jogsaw, wood lathe, etc.

**Wood Turning.**

1. Wood turning will be taught and practiced in all of its forms, including straight cylindrical, angular grooves, square grooves, curved grooves, heads, compound curves, baluster turning, face plate work, external clinking, internal clinking, centering of stock as core of glued-up work, inside turning, mandrel turning, etc.
2. Illustrated lectures will be given covering such topics as:  
Woods most commonly used.  
Speeds of material according to size.  
Cutting action of turning tools.

Different methods of finishing turned work on lathe.  
Application to furniture making.

Different makes of lathes.

Mattison automatic lathes.

Back knife lathes.

**Forge Work (one-half year).**

How to make and keep up a forge fire.

Economy in the use of fuel.

Proper dress to give freedom of exercise in forging operations.

Proper heats for forging operations on iron and steel.

Proper tools necessary in average blacksmith work.

Instruction and ample practice in the use of the hand hammer such as drawing out from round to square and bending back upon itself and welding, using pieces of scrap as far as possible.

Instruction in the cost of coal and iron as a basis for economy in their use.

Each student assists, at least, in the repair of his forge when necessary.

Making of pokers, shovels, etc., for each forge for use during the term.

Making of three or four bolts of different dimensions, including solid and welded heads, involving upsetting and the use of top and bottom swages and heading tools. Emphasis to be placed on soundness, dimensions and symmetry.

Use of top and bottom fuller in drawing out in such exercises as solid wrenches.

Use of the sledge hammer in assisting other pupils.

Welding, beginning with simple exercises in the welding of two pieces of simple shaped iron and afterwards soft steel, using flux.

Welding of chain links.

Introduction of general work for use in other shops in the department.

Lectures or talks on the metallurgy of iron and steel, including the composition, properties, uses and manufacture of pig iron. Bessemer steel, wrought iron and tool steel. These are taken up some time after the pupil has had experience in the working of iron so that a study of its properties may be better appreciated.

Exercises in the working and tempering of tool steel, common, self-hardening and high speed. Exercises to include the

cold chisel, blacksmith tools when required in shop and common forms of lathe tools.

Exercises in the use of the steam or power hammer.

Individual projects involving the foregoing principles are permitted and encouraged provided the work does not involve too many operations in other shops.

Pupils are required to cut off their own stock when new material is used.

### **Foundry (one-half year).**

Exercises in the molding of simple patterns in two flasks in green sand.

Talks on the composition and properties of molding sand.

Molding of split patterns, use of three-part flasks.

Demonstration in core making and the molding of patterns involving cores.

Skin dry and dry sand molding.

Use of a few different core compounds.

Talks on the mixing of metals in connection with cupola charging. Cupola practice including cleaning out, charging and pouring off.

Match plate work.

Brass molding including mixing of metals, operation of brass furnace, pouring castings in brass.

Dressing of castings, using wire brush and emery wheel.

### **Pattern Making (one-half year).**

Suitability of different woods for making patterns.

Proper use of the shrink rule in dimensioning patterns to be cast in different metals.

Correct amount draft or taper to be allowed in patterns.

Allowance for machining or finishing.

Construction of pattern to allow machined or finished parts to be cast in the drag.

Instruction in making a layout or diagram on wood.

Construction of pattern involving simple core work.

Varnishing of patterns, using colors to distinguish cores, also brass patterns from others.

Use of leather fillet.

Emphasis on accuracy in pattern turning as compared with ordinary wood turning.

**Advanced.**

Practice in the construction of patterns for steam and gas engines such as water and air cooled cylinders, steam engine cylinders.

Sweep work.

Practical ways of reducing cost of patterns and castings.

**Machine-Shop Practice.****First Term.**

Chipping and filing of plane surfaces involving the use of the square and straight edge.

Laying out of holes for drilling. Drilling, tapping and reaming.

Hand-polishing on bench work.

Talks on the use of measuring instruments and gages.

Use of stocks and dies.

Elementary lathe work, plain turning, sample chuck and face plate work, filing and polishing.

Use of centering machine.

Use of hand and machine hacksaw.

Grinding of simple lathe tools.

Talks on various forms of simple lathe, shaper and planer tools and their uses and elementary principles of lathe operation.

**Second Term**

Advanced bench work including scraping and fitting.

Advanced lathe work, including taper turning, screw cutting with use of change wheels.

Talks on the production of an original surface and calculation of change wheels for screw cutting, pitch of screw threads.

Exercises on the use of the milling machine, including use of the dividing head, gear cutting.

**Order of Shop Work.**

1. Woodwork.
2. Forge.
3. Foundry.
4. Pattern making.  
or simultaneous.
5. Machine Shop.

## MECHANICAL DRAWING

### In Intermediate Schools

**M.1 Eighth Grade:** Line work, dimensions, arrangement of views, drawing to scale, and some inking.

Freehand sketching from objects accompanied by working drawings of same.

Lettering.

**M.2** Continuation of M.1.

**M.3** Continuation of Eighth Grade work, introducing to Engineering, Architecture, and the Trades.

**M.4** Continuation of M.3.

Note: "M" indicates mechanical drawing.

#### Purpose:

It is the general purpose to prepare all students who take this work either for going into employment at the completion of their school work, or to enter any of the city high schools and continue their drawing in any of the various special courses offered.

### In High Schools

Mechanical Drawing courses are arranged with reference to the course of study being pursued.

College Preparatory Drawing consists of one term of plane geometrical and constructional drawing; one term of solid geometrical drawing, intersections and developments, as required by the State university.

Mechanic Arts Drawing prepares for engineering courses in the universities, continuing the six year courses in the City high schools, or practical use in industrial pursuits.

Normal Manual Training Drawing offers training in geometrical drawing, the developments and intersections; also furniture, pattern-making and machine drawing.

Pattern-making, Cabinet-making, Foundry, Forge, and Machine Shop Drawing consists of special training in preparing working drawings, useful and rational designs consistent with good shop practice.

Machine Draughting offers a special training in mechanical drawing involving shop practice, machine design, detailing, and drawing-room methods, in which the student is given sufficient practice to prepare dependable drawings with neatness and dispatch.

Engineering, mechanical and electrical drawing, gives practice in the preparing of designs, details, working draw-

ings, estimates, graphics, mathematical, mechanical, and electrical determinations.

The above courses of drawing all give practice in sketching, dimensioning, lettering, tracing, and blue printing. They are intended to be both practical and educational. In all except the college preparatory drawing, the student is immediately called upon to prepare himself to produce rational working drawings, established methods are explained and original thought encouraged and developed. It is hoped that anyone compelled to drop out at any time will have derived some tangible benefit from this work.

The following drawing may occur in different grades, depending upon the course of study followed by the pupil:

	No. weeks.	Periods per wk.
<b>M.3</b>		
Introductory to engineering and the trades.		
Line work, arrangement of views, dimensioning, drawing to scale, inking, freehand sketching of objects accompanied by working drawings of same, lettering.....	20	5
<b>M.3.c</b>		
Machine draughting. Same as M.3, except amount of time.....	20	15
<b>M.4</b>		
Continuation of M.3.....	20	5
<b>M.4.c</b>		
Continuation of M.3.c.....	20	15
<b>M.5</b>		
Mechanical engineering, mechanic arts, pattern-making, forge, foundry, machine shop.		
The preparing of general drawings and detailing same, from the prints of machine parts, perspective drawings, sketches, data, etc. ....	20	5
<b>M.5.a</b>		
Electrical engineering. Same as M.5, except the substitution of electrical for machine parts .....	20	5
<b>M.5.b</b>		
Normal manual training, cabinet-making.		
Same as M.5, except the substituting of furniture and wood-work for the machine parts .....	20	5

	No. weeks.	Periods per wk.
<b>M.5.c</b>		
Machine draughting. Same as M.5, except amount of time.....	20	10
<b>M.6</b>		
Mechanical engineering, mechanic arts, pat- tern-making, forge, foundry, machine shop —the preparing of general drawings and detailing same from machines and machine parts .....	20	5
<b>M.6.a</b>		
Electrical engineering. The preparing of general drawings and detailing same for electrical machinery and apparatus.....	20	5
<b>M.6.b</b>		
Normal manual training. Cabinet-making. Same as M.6, except that most of the work is in wood-work.....	20	5
<b>M.6.c</b>		
Machine draughting. Same as M.6, except amount of time.....	20	10
<b>M.7</b>		
Mechanical engineering, mechanic arts. The preparing of working drawings involving the consideration of transmissions, gearing and mechanical movements.....	20	5
<b>M.7.a</b>		
Electrical engineering. The preparing of working drawings, involving the consider- ation of transmissions, gearing, and elec- trical devices .....	20	5
<b>M.7.c</b>		
Machine draughting. Same as M.7, except amount of time.....	20	10
<b>M.8</b>		
Mechanical engineering. Mechanic arts. De- signing and drawing of simple machines from formulas, data, and accepted practice, graphics, statics .....	20	5
<b>M.8.a</b>		
Electrical engineering. Same as M.8, as ap- plied to electrical machinery.....	20	5



		Periods No. weeks. per wk.
M.8.c		
	Machine draughting .....	20 10
M.9		
	Mechanical engineering. Machine draughting. Machine design, strength and selection of materials .....	20 5
M.9.a		
	Electrical engineering. Electrical machinery designs, strength and selection of materials .....	20 5
M.10		
	Mechanical engineering. Machine draughting. M.9 continued, involving the graphics of work, operation, efficiency, etc.....	20 5
M.10.a		
	Electrical engineering. M.9.a continued, involving the graphics of work, operation, efficiency, etc. ....	20 5
M.11		
	Mechanical engineering, electrical engineering, machine draughting. Engineering sketching, estimating, calculating, designing, and illustrating by perspective sketches, sectioning, dimensioning, etc.....	20 5.
M.12		
	University preparatory. Plane geometrical drawing, as required by State University..	20 5
M.13		
	University preparatory. Solid geometrical drawing, as required by State University..	20 5
M.14		
	Machine drawing. Special for those having completed M.12 and M.13.....	20 5
M.15		
	Machine drawing. M.14 continued.....	20 5

### SURVEYING DRAWING

#### In the High Schools

Note: "S" indicates Surveying Drawing.

#### S.1

Freehand lettering. Principles of the Roman, block, and ornate alphabets.....	20	5
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	No. weeks.	Periods per wk.
<b>S.2</b>		
Freehand lettering. Continuation of S.1 work, with addition of English and German texts, and the general arrangement of titles .....	20	5
<b>S.3</b>		
Map drawing. Includes the usual conventions for plane surveying with practice in the drawing of maps from models furnished by the surveying class.....	20	10
<b>S.4</b>		
Map drawing. A continuation of S.3 course with emphasis upon the complete map, including the arrangement of title, length and bearing of each boundary line, etc.....	20	10
<b>S.5</b>		
Surveying drawing. For those who have had drawing M.12, M.13, and Trigonometry, consisting of field work, use of tape, instruments, plane table, plotting from work, tracing and blue printing.....	20	5
<b>S.6</b>		
Continuation of S.5.....	20	5

## ARCHITECTURAL DRAWING

### In the High Schools

A four-year course as outlined is intended to give a preliminary training, fitting for office or college.

Courses 19, 20, 21, and 22 are sufficient for college entrance requirements.

Note: "Ar" indicates Architecture.

#### Ar.1a.

Line work, dimensioning, arrangement of views, drawing to scale, freehand sketching of objects, accompanied by working drawings of same.....

5

#### Ar.1.b

Freehand drawing (composition proportion), elements of perspective, pencil work.....

5

	No. weeks.	Periods per wk.
Ar.2.a		
Continued from Ar.1, with special application to work in Architecture.....	20	5
Ar.2.b		
Continued from Ar.1, pencil and colors.....	20	5
Ar.3		
Bungalow design, arrangement of rooms, etc., study of interior and exterior composition, styles .....	20	10
Ar.4		
Ar. 3 continued, scale and full-size details....	20	10
Ar.5		
2-story houses, study of staircases, etc.; treat- ment of materials, simple rendering in pen- cil, ink, or color.....	20	10
Ar.6		
Ar.5 continued, methods of estimating, out- lines in specification writing.....	20	10
Ar.7		
Problem; as a residence, group of small houses; all to a given program of require- ments. Study of Greek orders.....	20	10
Ar.8		
Problem; school-house, small church, office building; all to a given program of require- ments. Study of Roman orders.....	20	10
Ar.9		
Study of classic orders. Lettering; rendering of plates of classic architectural details....	20	5
Ar.10		
Study of the orders continued; rendering in various media, ink, sepia, and color.....	20	5
Ar.11		
Elements of architectural draughting; work- ing drawing of simple detail. Plans and elevations for simple bungalow.....	20	5
Ar.12		
Continuation of preceding Ar.21; plates of de- tails; perspective drawing rendered in color .....	20	5

**GRAPHICS**

Note: "G" indicates Graphics.

	No. weeks	Periods per week
<b>G.1</b>		
Engineering lettering, composition of forces, movements, investigation of simple frames, investigation of loads, normal and eccentric .....	20	10
<b>G.2</b>		
Complex frames, reversals of stresses, design and detailing .....	20	10

**STRENGTH OF MATERIALS**

Note: "Ss" indicates Strength of Materials.

<b>Ss.1</b>		
Theory of moments, reactions, forces, in materials, introducing work in cement .....	20	6
<b>Ss.2</b>		
Continuation of theory Ss.1; theory of design; laboratory demonstrations in wood, steel, stone, cement, etc .....	20	6

**MUSIC****Purpose:**

It is the aim in teaching this subject to develop the aesthetic phase of the education of the student and his power of highest enjoyment, that he may identify himself with the uplift and betterment of the community, to train for quickness and accuracy of thought and action in the mastery of music, which broadens the viewpoint, encourages self-expression and tends to develop the creative instinct and elevate the taste for music in the masses.

**Scope:**

In a broad sense, cover the field of music literature, both vocal and instrumental, and lead the student to hear, appreciate, compare, sing and play good music.

**Methods:**

Use any method of individual expression that will appeal to the student, and gain from him power to do; that will develop his powers of discrimination and judgment, and foster individual thought and enjoyment.

## In Intermediate Schools

**B7:**

Songs and studies in unison, two parts, three parts.

1. Sight Singing: Signatures and keys, including four sharps and four flats. Meter signatures, two, three, four, six part measures with constant application of same. Emphasis placed on phrase singing. Visualization exercises.

2. Ear training.

3. Written work: Scales, short phrases.

Make application of above with use of Alternate Modern Third Reader.

4. Familiar songs to be well learned: America, Dixie, Old Black Joe, Annie Laurie, Swanee River. Other songs of choice.

**A7:**

Continue and emphasize B7 work, using more difficult material. Eliminate singing names, if possible. Familiar songs to be emphasized: My Old Kentucky Home, Believe Me If All Those Endearing Young Charms, My Heart's In the Highlands. Other songs of choice.

Use Alternate Modern Third Reader and other available material.

**A8:**

Three part songs and studies.

Develop and make application of the Bass Clef. Teach Key signatures, five and six flats, five and six sharps. Meter signatures 9-8—12-8. Teach chromatics and minors as they occur in material used. In reading, use words at sight, laying stress upon grasping the musical thought of each phrase. Written work.

Familiar songs: Auld Lang Syne, The Star Spangled Banner, Coming Thro' the Rye. Other songs of choice.

Use Laurel Music Reader and other available material.

**B9:**

Songs: Three part and four part. Sing words at sight. Written work.

Teach Tonic, Dominant, Sub-Dominant Chords. Hear, recognize, sing them.

Use Laurel Music Reader and other available material.

Lessons in music appreciation, using Mendelssohn and Schubert as a basis. At least one song of each learned.

**A9:**

A general review of previous work in theory. Much chorus singing. Emphasize strong rhythmical expression and interpretation.

Lessons in music appreciation, using Schumann and Grieg as a basis. General talks on artists and musical events of present time.

**Organizations:**

Orchestra, Girls' Glee Club, Boys' Glee Club; Chorus Singing, entire school as often as possible.

**In High Schools**

Harmony daily: Two Years' Course.

Music History daily: Two Years' Course.

Music Appreciation: Two periods per week.

(Two Years' Course.)

Sight Reading: Two periods per week.

(One Year's Course.)

Organizations

Two periods per week

Mixed Chorus.

Boys' Chorus.

Girl's Glee Club.

Boys' Glee Club.

Orchestra.

String Quartet.

The above may be taken in Ninth, Tenth, Eleventh, Twelfth or Thirteenth years. For simplification and unity of work, the terms may be designated as follows:

First term's work, A.

Second term's work, B.

Third term's work, C.

Fourth term's work, D.

Term A. Music History, daily. Origin and development of music among ancient nations, with contemporaneous history of their religion, architecture, literature, art, Roman chant, folk-songs, minstrels, troubadours, minnesingers. Periods covering Paris and Netherland schools, Choral and Protestant music in Germany, rise of Harmonic music, Opera, Oratorio, Italian school of singing, instrumental music; violins, organs, clavier. Development of suite and sonata. Biographies of Bach, Handel, Haydn, Mozart and their music.

Term B. Music History, daily. Biographies of Beethoven, Schubert, Weber, Mendelssohn, Schumann, Chopin, Liszt. Opera during Nineteenth Century.

Term C. Music History, daily. Other Nineteenth Century composers and their works.

Germany, Bohemia, Scandinavia, Russia, France, England, Great Vocalists and Instrumentalists of all times.

Term D. Music History, daily. Composers of present day and their works: Puccini, Saint-Saens, Debussy, Elgar, McDowell, Strauss, and others of choice. General review of subject, emphasizing important phases.

### Harmony:

Term A, daily. Notation, scales, intervals, triads and inversions. Harmonize simple melodies, employing Tonic, Dominant, Dominant seventh, Sub-dominant chords with inversions. Much ear-training cadences, sequences. Constant application of all work at key-board. Reference to standard works for examples of above.

Term B, daily. Supertonic, Mediant, Sub-Mediant, Sub-Tonic chords with more difficult melodies, major and minor. Continuation of Dominant seventh chord. Passing tones. Embellishments (simple). Continue ear-training. Simple key-board modulations. Reference to standard works for examples of above.

Term C, daily. Dominant ninths, elevenths, thirteenth. Suspensions. Secondary sevenths. Altered chords. Modulations. Pedal point. Harmonizations at sight-keyboard. Reference to standard works for examples of above.

Term D, daily. General review. Accompaniments. Original writing from harmonic and contra puntal standpoints. Advanced work in ear training. Melodic figuration. Writing more difficult accompaniments. Old modes. Elementary work in instrumentation.

### Appreciation:

Term A. Two periods per week. Extended work with Mendelssohn and his compositions. Chopin, Liszt, Schumann.

Term B. Two periods per week. Development of Opera briefly given and exemplified through works of Rossini, Weber, Verdi, Wagner.

Term C. Two periods per week. Biographies and music of the following masters: Bach, Handel, Haydn, Mozart (10 weeks), Beethoven, Schubert (10 weeks).

**Term D.** Two periods per week. Study of modern composers, choice left with teacher. Talks on great Vocalists and Instrumentalists. Great artists and musical events of present time discussed.

**Sight Singing:**

**Term A.** Two periods per week. Review previous work in theory with application to studies in *Harmonia Reader*, and all available material. Special attention to voice, enunciation, phrasing, attack, marks of expression, interpretation.

**Term B.** Two periods per week. Different songs of standard works of masters from all available material with special reference to all points mentioned under Term A.

**Organizations:**

Mixed Choruses, Boys' Chorus, Orchestra, String Quartet, Girls' Glee Club, Boys' Glee Club. Open to all students in the school who have ability in these lines.

## **PHYSICAL EDUCATION (BOYS)**

**Aim:**

It is the aim of this department to provide such instruction and facilities as are necessary to enable all the pupils in the City Intermediate and High Schools to engage in those physical activities that are known to be of value in developing organic vigor, neuro-muscular strength and skill, co-ordination, good posture, and certain desirable traits of character, such as courage, confidence, sound judgment and will power; the physical possibilities, limitations and control of the human body.

A special effort is made to develop the habit of outdoor exercise, and to create and maintain an active interest in those athletic games that are sources of organic vigor, of vitality, of physical and mental efficiency.

Particular care is exercised in selecting and adopting the activities to the various periods of adolescent life.

**Course:**

The practical course of 2 periods per week is required by all students through the Intermediate and High Schools. Any student who, for any physical reason is unable to take



the regular work, is given corrective work suited to his individual needs.

**B7, A7:**

Marchings and tactics.

Free-hand exercises.

Light Apparatus:

Wands.

Free-play and short outdoor runs.

Organized games.

**B8, A8:**

Marching and tactics.

Free-hand exercises.

Light Apparatus:

(a) Wands.

(b) Dumb-Bells.

Free-play and running.

Organized games.

**B9:**

Floor maneuvers.

Military marching.

Free-arm calisthenics.

Dumb-bells.

Wands.

Elementary apparatus work, two pieces.

Indoor and outdoor gymnastic games.

Free-play, short outdoor runs.

**A9:**

Military marching.

Free-arm calisthenics, and floor exercises.

Dumb-bells.

Wands.

Elementary apparatus work, two pieces.

Indoor and outdoor gymnastic games.

Free-play, short outdoor runs.

**B10:**

Military drill (optional).

Intermediate apparatus work, four pieces.

Indoor and outdoor gymnastic and athletic games and play.

**A10:**

Military drill (optional).  
Intermediate apparatus work, four pieces.  
Dumb-bells.  
Indian clubs.  
Indoor and outdoor gymnastic and athletic games and play.

**B11:**

Setting up exercises.  
Advanced apparatus work, two pieces.  
Indoor and outdoor gymnastic and athletic games and play.

**A11:**

Setting up exercises.  
Advanced apparatus work, two pieces.  
Principles of wrestling.  
Indoor and outdoor gymnastic and athletic games and play.

**B12:**

Setting up exercises.  
Advanced apparatus work, four pieces.  
Wrestling, boxing optional.  
Indoor and outdoor gymnastic and athletic games and play.

**A12:**

Setting up exercises.  
Advanced apparatus work, four pieces.  
Wrestling, boxing, Jiu Jitsu optional.  
Indoor and outdoor gymnastic and athletic games and play.

### **PHYSICAL EDUCATION (Girls)**

The purpose of this department is to determine the physical needs of each girl and provide such instruction, both theoretical and practical, as will result in her highest physical efficiency. This work continues throughout the Intermediate and High School course.

In its theoretical course this department co-operates with the science and home economics departments in the study of hygienic living and the fundamental laws of health. It is designed to contribute valuable data to the formation of ideals of right living that will guide the student in the social and civic life of the community.

The practical course is progressive and is planned to train the girl physically in activities which will best give her self-control and self direction and lead her to the full realization of health and happiness. Because of the immense importance of the transitional period from childhood into early adolescence, special care is exercised in selecting the activities of these grades.

Girls who for any reason cannot take the regular work are given special and corrective work according to their individual needs.

### PRACTICAL COURSE

#### **B7, A7:**

Marching and tactic; free hand exercises; light apparatus.

Rhythmic work; free play and short out-door runs; organized games.

#### **B8, A8:**

Progression from the work of 7th grade; marching and tactics; free hand exercises; light apparatus.

Rhythmic work; free play and running; organized games.

#### **B9:**

Marching, running and simple tactics; free hand work; rhythmic work; gymnastic games.

#### **A9:**

Marching, running and simple tactics; free hand work; exercises with light apparatus; rhythmic work; gymnastic games.

#### **B10:**

Marching, running, tactics; free hand work; exercises with light apparatus; rhythmic work; athletic games.

#### **A10:**

Marching tactics; free hand work; exercises with light apparatus (optional); rhythmic work; athletic games.

#### **B11:**

Marching, tactics; advanced free hand; advanced exercises with light apparatus; heavy apparatus work (optional); advanced rhythmic work; athletic games; athletics.

#### **A11:**

Marching, tactics; advanced free hand; advanced light apparatus; heavy apparatus work; advanced rhythmic work; athletic games; athletics.

**B12:**

Advanced free hand; advanced light apparatus; advanced heavy apparatus (optional); athletic games; athletics.

**A12:**

Advanced free hand; advanced light apparatus; advanced heavy apparatus (optional); advanced rhythmic work; athletic games; athletics.

**Summary of Outdoor Work****B10, A10:**

Volley Ball, Captain Ball, Base Ball.

**B11, A11:**

Hockey, Volley Ball, Base Ball, Basket Ball, Tennis, Track.

**B12, A12:**

Hockey, Volley Ball, Base Ball, Basket Ball, Tennis, Hand Ball, Track.

**Summary of Department of Physical Education (Girls)**

Indor instruction; instruction in gymnastic exercise: Regular class work; advanced class work; special class work; corrective class work; corrective individual special.

Instruction in Hygiene: Personal hygiene; general hygiene and sanitation; first aid and bandaging.

Outdoor instruction: Class instruction in corrective exercises; instruction in outdoor competitive games; instruction in athletics.

Physical examinations: Regular; supplementary.

Nursing: Rest room supervision and administration; first aid administration.

**BOTANY****Purpose:**

The purpose of the study of botany in the High Schools is (1) to acquaint the pupil with the plants of the region in which he lives, including the crops under cultivation, the economic varieties introduced from other countries, the native species that are significant of soil or climatic conditions and of changes of season, and the plants used for ornamental purposes in our garden, parks and streets. (2) To teach the pupil the life-activities of plants; (3) train his powers of accurate observation and to form in him the habits of in-

structive reasoning and of recognizing the relationship of cause and effect; (4) the improvement of economic plants by selection and breeding.

**Scope:**

Plant study includes:

1. Germination, growth and development.
2. Nutrition (the absorption, conduction, manufacture and digestion of food materials) and the excretion of waste substances.
3. Respiration.
4. Opening of flowers and leaf buds.
5. Pollination; fertilization and development of seed and fruit.
6. How plants are adapted to perform these functions shown by a study of their absorbing parts; conducting and distributing fibres; chlorophyll tissues; parts concerned in digestion; parts used for storage; parts used for excretion of gases and water; vegetative propagation of species; seed formation.

**Methods:**

1. Such studies are carried on and accomplished by very frequent excursions into the field by the individual pupil and three or more formal excursions per term, on the part of the class as a whole, under the leadership of the teacher.
  - a. To the beach, in December and January for seaweeds and sand dune vegetation.
  - b. To some canyon, during spring or early summer.
  - c. To some place in the valley for the study of crops during cultivation or harvesting or to some city park.
2. Experiments performed in school gardens, home gardens, and laboratory.
3. Microscopic study of organs used by plants in their respective life activities.

**Agricultural Botany.**

This course is planned to familiarize the student with those phases of plant study which are most likely to be of practical assistance in the business of producing ornamental or economic plants.

**B10, A10:**

While a careful study is made of representative forms of the more important groups, special attention is given to those contributing directly or indirectly as food, shelter or clothing for man and domestic animals.

Practical plant physiology is regarded as one of the more important features of the course. The student also learns the practical plant families of the higher groups, their common representatives, characteristics and importance. In this phase of the work, he is greatly assisted by practical work in the botanical garden. Here an effort is being made to bring together a great many different plants, each being placed, so far as possible in an environment like that of its native habitat.

**GENERAL AGRICULTURE****Purpose:**

This course is designed primarily for the student who will probably make some use of the practical knowledge and scientific training it offers them. Its purpose is to present the principles that are fundamental in all the larger aspects of agriculture, briefly and clearly, and to give as much of first hand observation and outdoor work as practicable.

**Methods:**

The approach is by laboratory work, in which the facts and laws in question are ascertained by experiment, observation and field tests, supplemented with discussions, text and reference books. The school garden is still maintained as an almost indispensable accessory. Common plots, cared for by the class, further bring out the leading characteristics and requirements of local crops. Practically all of the work is now being done by the pupils in our High Schools, who have demonstrated their ability to plow, harrow and cultivate with a horse or team as well as with hand tools.

**Scope:****B11 or B12:**

This course is offered in either the eleventh or twelfth years and is as broad as the title indicates, and may be outlined here: Agriculture, its fundamental problems and relation to other subjects; the improvements of plants and animals; the principles of breeding, plant foods; the soil, its origin, classification, physical and mechanical properties; the soil as related to plants; drainage and irrigation; soil

maintenance; farm crops; enemies and diseases of farm crops, feeds and feeding; types of farm animals; the rudiments of farm management.

**A11 or A12:**

The work of the two terms is interchangeable, depending upon weather and season conditions.

**Special Problems in Agriculture.**

Students who have spent three years in close study of agriculture frequently express the desire to take up the solution of some practical problems. This course is offered in response to this demand.

In this work which will be original research in spirit and nature, the students are to receive help from the instructor only in the way of supervision and suggestion. It is thus apparent that only those who have had sufficient training and experience to enable them to work more or less independently are eligible for this course. Moreover, such work comes as a most fitting test of the efficiency the student has gained from his previous courses. Open to seniors only.

Prerequisite: Three years of agriculture.

**Horticulture and Landscape Gardening  
(One Year)**

**Purpose:**

The purpose of this course is two fold; (1) to train the individual in the principles and practice of successful culture of the plants used about the home for table use and for ornamental purposes; (2) to make him familiar with elements, principles, and factors that constitute beauty in the laying out of grounds.

**Methods:**

These principles are taught the pupils by individual practice in school garden plots and in practical work in the laying out of the school campus and in the care of its lawns, beds, vines, and trees; such work supplemented by experiments and field work at home, experiments and microscopic study in the laboratories, and excursions into the hills and to our parks.

**Scope:****B11, A11:**

The ground covered by the course includes:

1. Studies in composition, rough analysis, characteristics, food content, enriching and drainage of soils.
2. Seed selection and sowing.
3. Cutting and planting of slips.
4. Garden practice in grafting and budding, pruning and trimming, planting of trees and transplanting of seedlings, etc.
5. Life histories, habits, culture, and control of the commoner forms of plant diseases and pests.
6. The needs of plants for proper growth and development shown by home garden, and laboratory experiments in the absorption, conduction, manufacture, digestion, use and storage of food materials, and the plants' dependence upon soil foods, atmospheric humidity and sunlight.

**Ornamental Gardening**

Emphasis is placed upon the various methods of propagation and the best uses of ornamental plants of all sorts. Practice is given in the sowing of seeds in flats, transplanting, potting, the making of cuttings, bulb planting, etc.

**B11, A11:**

Each student has the opportunity to learn how to care for plants in lath-house, green-house, clothhouse, hot-bed, cold-frame, and out of doors. A portion of the practice work consists in the planning, planting and care of the ornamental plants on the school grounds. An original plan for the ornamenting of a home site is required of each member of class at the close of the work. This work is to be correlated with that of the classes in house architecture and mechanical drawing. The former makes rough plans, the latter gets out the blue prints, when they are turned over to the class in ornamental gardening for their ideas in ornamenting the grounds. Each student is also expected to make a collection of the more important ornamental plants.

Prerequisite: Botany.

**Horticulture and Forestry.**

This subject considers the various operations necessary to the successful production and marketing of fruits and forest trees.



**B11, A11:**

The student is given ample practice in seed sowing, transplanting, various methods of budding and grafting, pruning, the mixing and application of insecticides and fungicides, etc. Questions of the control of insects and diseases are thus dealt with in a practical way, and the work of plant breeders is given much attention, along with the subject of hybridization, selection, etc. Laboratory work on plant diseases occupies some time, and each student is required to make a collection of the commoner forms. The class makes frequent excursions to commercial and home orchards, to packing houses, and to the markets.

Prerequisite: Botany.

**Farm Crops and Management.****Purpose:**

To teach the student the identification of the crops grown on the farm, both common and special, their adaptations, habits of growth, methods of culture, harvesting and improvement by selection and breeding; the study of markets, their demands, influence, power of control and fluctuation; the identification and use of weeds, their methods of control and eradication; the benefits and arrangements of crop rotation and the fundamentals of irrigation and drainage.

**Method:**

The work is conducted by recitations, laboratory exercises and field work. It is adjusted to the seasons and weather conditions and is correlated with the work in "Soils and Fertilizers."

**Scope:****B12:**

This term is devoted chiefly to the collection and identification of field crops and weeds, harvesting and threshing of grains and other seeds; laying out and constructing irrigation and drainage systems.

**A12:**

This term is devoted to the continuation of the work of the previous term and the planting and judging of grains, grasses and other crops.

Prerequisite: Botany.

**Soils and Fertilizers.****Purpose:**

To teach the student the different kinds of soils, their origin, formation, texture and contents; the action of the weather upon them; the methods of cultivation best suited to each; the methods and benefits of cultivation; the origin, application, value and mixing of different fertilizers.

**Method:**

The work is conducted by class work, which consists in the study of a text book, reference books, bulletins, lectures and essays. In the laboratory, experiments are made with different kinds of soils, including mechanical analysis and tests with fertilizers; in the field experiments are made with fertilizer tests on field crops, forming and conserving mulches, control and eradication of weeds and the study of cover crops as best suited to the various soils and conditions.

**Scope:**

This course is correlated with farm crops and management.

**B12:**

This term is devoted chiefly to the collection and identification to weather, climate and other conditions.

**A12:**

This term is a continuation of the work of B12 and the study of fertilizers; also fertilizing crops.

Prerequisite: Chemistry.

**GENERAL ZOOLOGY****Purpose:**

The purpose of Zoology in the High Schools is to acquaint the student with animal life, to teach the habits and life history of the local animals as well as general relationships and laws governing all animal life.

**Methods:**

The subject of Zoology will be studied with the idea of development as a basis. The principles of development will be exemplified by certain types, or treated by means of topics, which contain the truths and fundamental laws of animal life, verified by observation and experiment. The work will begin with a study of the animals in their living state and will be followed by dissection and comparative study.

**Scope:**

The ecological and physiological phases will be considered, and special emphasis will be given to reproduction and development treated in such a manner as to pave the way for a broader and more intelligent knowledge regarding the human physiological functions.

Situated as we are in the midst of a great flower and fruit region, and with the ocean with its teeming life, the economic phases at once offer interest and profit in study. Special attention is therefore given to the insects. By observation, collection and discussion of special bulletins bearing on the subject, the student is made familiar with the ravages and damages wrought, as well as the proper means of eradicating the pests.

The food animals of the ocean, the shell fish, the crustaceans and the fishes receive much attention, while those forms that are a menace, such as the teredo, the limnorus and the fish parasites are objects of experiment in the laboratory.

**B10:** Invertebrates.

**A10:** Vertebrates.

**Systematic Zoology.****Purpose:**

To give the student a general insight into the relationship of animals.

**B11:**

The work is necessarily a laboratory course with lectures and discussions. Birds, reptiles, mammals and fossils constitute the material.

**Advanced Marine Biology.**

This course calls for an exhaustive study of the work carried on by the U. S. Bureau of Fisheries.

**B11 or B12:**

Laboratory and field experiments in such problems as propagation, regeneration, adaptation, oxygenation, the nutrient food value of edible food fishes, fish parasites, fish diseases, fish feeding and spawning habits, canning, shipping, the food value of shell fish and crustaceans, practical experiments with the teredo and limnoria; methods of wood preservation; sea weeds and their commercial products; chemical tests; cataloging collections.

**A11 or A12:**

Continuation of B11 or B12. Prerequisite, marine zoology.

- a. Efficiency.
- b. Biology.
  1. Why study Biology?
  2. Cells and Tissues.
- c. Plants.
  1. Bacteria, yeasts, molds. Growth and reproduction.
  2. Spirogyra and Marchantia. Growth and reproduction.
  3. The ordinary flowering plants. Structure and use of parts.
  4. Fertilization in flowering plants.
  5. Plant breeding.
- d. Animals (Lower).
  1. Amoeba, Paraamoecium and Hydra. Life history.
  2. Tape worm and crayfish. Life History.
  3. The honey bee. Life history.
  4. Fish and fish hatcheries.
  5. Development of the animal egg.
  6. Animal breeding.
- e. Man.
  1. General structure. Demonstration with skeleton and some small animal.
  2. Structure of reproduction organs.
  3. Reproduction.
  4. Sex development and its dangers.
- f. Bacteriology.
  1. Preparation of cultures.
  2. Conditions of bacterial growth.
  3. Preventative measures, disinfectants, etc.
  4. Infectious venereal diseases.
  5. Tuberculosis.
  6. Typhoid.
  7. Malaria and Diphtheria.
  8. Vaccination, vaccines, serums, antitoxins, etc.
- g. Public Health.
  1. The City Health Department.
  2. Our water supply.
  3. Pure food, especially milk.
  4. Health laws, City, State and National.
  5. The disposal of waste.

**h. Physiology and Hygiene.**

1. Why and how we breathe.
2. Defects in the breathing machine, how to correct them.
3. The air we breathe; ventilation.
4. The digestive machine and its organs.
5. Our food, quantity and kind.
6. Constipation and diarrhoea.
7. Care of the teeth.
8. The pumping system; its work.
9. How to keep the pump in good order.
10. Bathing and clothing.
11. Colds and how to contract them.
12. Work, play and sleep.
13. Stimulants and narcotics.
14. Quacks and patent medicines.
15. The eye.
16. The ear.
17. The hair and feet.
18. First aid to the injured.

**Animal Husbandry.****Purpose:**

To acquaint the student with the different varieties and breeds of farm animals; their origin, types, habits, care and training, including the various diseases and ailments of each; food values, selection and breeding; the advantage of good stock and good methods.

**Methods:**

The work is presented by class-room and field practice. The former consists of the study from text books, references and lectures, the latter is by score card judging of animals on school and adjoining farms; also the care and handling of the animals as far as possible, and the compiling of food rations.

**Scope:****B11:**

This term is devoted to the study of cattle and horses.

**Scope:****A11:**

This term is devoted to the study of sheep, goats, hogs, chickens, and less important animals.

Prerequisite, Zoology.

**Dairy Husbandry:****Purpose:**

To equip the student with a thorough working knowledge of the dairy work, by teaching him the care of milk, the manufacture and care of its products, the operation and management of dairy herds, factory machinery and equipment.

**Method:**

One-half of the time is spent in the dairy laboratory; the remaining time in recitations, reference reading, lectures and excursions to dairies and factories.

**Scope:****B10:**

This term is devoted to the study of milk, which includes care of handling, cooling and aerating, pasteurization, bottling and shipping, testing and milk sanitation.

**A10:**

This term is devoted to the continuation of the work of B10, with the addition of the study of milk products and dairy planning, which includes making and caring for butter and cheese and the control of dairy bacteria; also the planning of dairy buildings and equipment and the handling of dairy machinery.

**Poultry Husbandry:****Purpose:**

To give the student an opportunity to familiarize himself with the various types and breeds of poultry and to study their adaptations; scientific as well as practical methods of incubation; rearing, caring for, feeding, selection; preparation for market; comparison of different methods of housing and yarding, as related to fancy and utility poultry culture; consideration of the factors influencing fluctuation of supply and demand.

The presentation of this course is by text-book, references, reading, lectures, laboratory exercises and outdoor work in our own poultry yards, and excursions to other yards, shows and markets.

**Scope:****B11, A11:**

This term is devoted to the study of incubation, breeding, feeding, housing and the preparation for market; anatomy, caponizing, disease identification, planning and constructing houses, coops, yards.

**Physiology:****Purpose:**

To give the pupil a knowledge of himself which will enable him to secure and maintain the highest degree of health and efficiency and to promote the same among his fellows; to study man in his relation to his biological environment, and at the same time, by means of laboratory work, to furnish a special educational training now gained from other natural science subjects; to introduce the pupil to the problems with which the human machine has to deal; and by laboratory experiments, recitations, lectures and special investigation to assist the student to a thorough understanding of the problems and their solution.

**Method:**

Five periods a week are devoted to the subject, one-third of the time being spent in laboratory work and special investigation; the remaining two-thirds, to recitation, lecture, and discussion.

During the year excursions are made to study the various problems of health and sanitation in the city. Every effort is put forth to make the work apply directly to the individual and his surroundings.

**Scope:**

The first half year is devoted to a study of the anatomy and physiology as a whole, including the following subjects:

(a) Histology study-brief. (b) General anatomy of the body. (c) Chemistry of living matter. (d) Digestion and absorption. (e) Nutrition. (f) Circulation. (g) Respiration. (h) Excretion.

The second half year. Some time is spent on the nervous system before proceeding to Hygiene.

(a) Sense organs and sensation. (b) Nervous system. (c) Personal hygiene with special reference to exercises, food, rest, bathing, colthing. (d) Domestic hygiene and sanitation with special reference to the immediate environment of the individual. (e) Public health and sanitation-protection, infectious diseases, bacteria, and public supplies.

**Physiology (Eighth Grade).**

This course is offered in the belief that it is as worth while to know the structures and function of our bodies as it is to know any other facts in the world, and that the

knowledge of these facts makes easier the teaching of physical training, hygiene, and sanitation, the last two of which are discussed in connection with each topic studied. The method of presentation is by texts, recitations, and demonstrations.

The following are the main topics taken up: The human body and its importance; buying, cooking, and caring for foods, the digestive organs and their work; air, the lungs and the air passages, the blood, heart and circulation; the kidneys, the skin, the nervous system, the eyes, ears and nose; the cells of the body; accidents, bacteria, etc.

Text: "State Primer of Hygiene."

### **Nature Study and Geography:.**

#### **B7, A7:**

The aim of this course is to give the student, in addition to the work outlined elsewhere as geography, an elementary knowledge of the facts in the world in which he lives. The method followed is by text, demonstration, and observation. Short trips are taken about the grounds and elsewhere, for the study of plants and animals; of soils, land forms, the effects of erosion; of weather, winds, heat and cold.

The order of the topics in Nature Study depends somewhat on the seasons and the weather; but it alternates with geography throughout the year.

Text: "Advanced Geography, State Series."

### **Introductory Science:**

#### **B8, A8:**

The purpose of this course is to continue the work of the seventh grade by a more intensive study of natural phenomena, to familiarize the student, in an elementary way, with plant and animal life, their relations to each other and to man, and to teach the fundamentals of gardening. The course is presented by texts, recitations, demonstrations, and the cultivation of individual gardens and class plots. Particular attention is given to seed planting, time to plant, transplanting, how to cultivate, how and when to harvest, weeds, comparison of varieties, etc.

Text: Hilgard and Osterhout's "Agriculture for Schools of the Pacific Slope."



## SCIENCE

### Physiography:

#### Purpose:

The aim is to present, in an elementary but scientific way, the fundamental facts, phenomena and laws connected with the study of the Earth and its relation to man.

Some of the ends sought are:

1. To implant a love for Nature.
2. To aid the pupil in discovering his natural bent.
3. To present usable information regarding common things.
4. To develop habits of scientific observation, inquiry, and reasoning.
5. To prepare for more advanced study in science.

#### Method:

As in other science courses, experimental work is fundamental. Laboratory work, field trips, visits to U. S. Weather Bureau, Chamber of Commerce and other points of interest, lectures and recitations are means employed in obtaining results. Also class discussions, and reference book work are of interest. A carefully kept note book is required of each pupil, entries into which are made in permanent form at the time of observation. Each school is well supplied with illustrative material and apparatus, including models, maps, weather instruments, stereopticons, etc. A fine and large collection of slides is being assembled to be used in common by the different schools.

Recognizing the difficulty of unification of the work through the school system, and also the demands of local condition and special objectives of the individual schools, the following plan will be pursued:

The course is to be given as outlined below. The time indicated for each topic is the minimum time allowed. An outline covering the remaining time is to be prepared by each school, enabling it to meet its local needs.

#### B9:

1. Universe: Solar system, Earth a planet, Earth's relation to the sun and moon. Time, 2 weeks.
2. Air: Properties and constitution. Time, 2 weeks.
3. Matter and Energy: Heat, electricity, magnetism, and light. Time, 4 weeks.

4. Water: Occurrence, composition, contamination, purification, rain, snow, and etc. Rivers. Time, 2 weeks.
5. Oceans: Extent, soils, movement of water, life, influence on climate of land, shore lines, harbors, islands. Time, 3 weeks.

**A9:**

6. Land Forms: Mountains, plateaus, plains, deserts. Time, 2 weeks.
7. Weather and climate. Time, 2 weeks.
8. Soils: Soil builders, nature, kinds, soil water, tillage. Time, 3 weeks.
9. Biology: Plant life, animal life. Time, 4 weeks.

Note: Teachers should obtain the detailed outline of the course which has been formulated by the committee.

**Descriptive Chemistry:**

The aim of this course is both scientific and humanitarian. Its object is to give the pupil a knowledge of the elements and compounds with which he will have to deal, the laws that control their inter-action, the causes of growth and decay in the vegetable and animal world, and the chemical processes that have contributed so greatly to industrial efficiency and have so profoundly influenced modern industrial and social development.

**Methods:**

The pupil is taught to draw his own conclusions both in the class-room and laboratory, to appreciate the truth that knowledge from books must supplement, not antecede, that obtained from experience. Four periods per week are spent in the laboratory and three periods in the class-room. The experiments are performed according to directions given either in the laboratory manual or by the teacher, and each pupil writes out his observations and deductions in a note-book. These note-books are carefully corrected by the teacher, and the faults and merits brought to the attention of the pupil. The lecture table is used freely to illustrate topics under discussion, and the work of the laboratory and text-books are co-ordinated and amplified by the teacher's demonstrations. A study of local industries is insisted upon, and emphasis is placed upon the practical application of chemical work to the life of the pupil and the community.

**Scope:**

In all college preparatory and industrial courses descriptive chemistry is offered either in the eleventh or the twelfth year. The outline of the work is as follows:

**First Semester:**

Introductory study of matter, oxygen, hydrogen, properties of gases, water, chemical re-action, the atomic theory, nitrogen and argon group, the atmosphere, solutions, acids, bases and salts, valence, compounds of nitrogen, chemical equilibrium, sulphur and its compounds, the periodic law, the halogens, molecular and atomic weights.

**Second Semester:**

A study of carbon, carbon compounds, the phosphorus family, silicon, titanium, boron, the properties of metals, the alkali metals, the alkaline earths, the magnesium family, the aluminum family, the iron family, copper, mercury, silver, tin, lead, manganese, chromium, gold and the platinum family.

**Qualitative Analysis:****Purpose:**

To enable the student to determine the constituents of solids and solutions, and to accustom him to the laws that govern solution and precipitation, to teach him habits of neatness, perseverance, and accuracy in chemical manipulation.

**Methods:**

Laboratory work six periods a week, and lectures, quizzes and recitations two periods per week. Given in the twelfth year of vocational courses and in the thirteenth year of other courses.

**First Semester:****Scope:**

The course consists of: Testing of solutions of known compounds as a study of characteristic reactions; separation of groups and members of groups with distinctive and decisive tests for each member; analyzing of liquid and dry unknowns and testing for metal elements; precipitation of acid groups and sub-divisions of each group; testing liquid and dry unknowns for acid elements or radicals; discussion of separation of basic and acid groups; tests employed; and reactions that take place.

**Second Semester:**

Lectures and recitations on the properties of the metals and acids two hours per week; laboratory work five hours per week. The work includes qualitative analysis of unknowns, followed by the synthetical preparation of inorganic salts, bases and acids.

**Quantitative Analysis:****Purpose:**

The purpose of the work in Quantitative Analysis is to enable the student to become familiar with accurate quantitative methods in gravimetric and volumetric analysis.

**Methods:**

The work is, of necessity, experimental. It is desired to make the work as individual as possible, and consequently great emphasis is placed upon the quiz work in the laboratory.

**Scope:****First Semester:**

Class-room recitations require but one period per week for twenty weeks, four double periods being given to laboratory work.

The class-room discussions include the following topics: General directions for quantitative work in gravimetric analysis; precision of analytical determinations; laboratory notes; general directions for volumetric analysis; analytical determinations made in laboratory and the dissociation theory as applied to quantitative analysis. Chemical problems on quantitative analysis are solved.

The laboratory work includes: Determination of Chlorine in Sodium Chloride; determination of Iron and Sulphur in Ferrous Ammonium Sulphate; determination of Lead, Copper, and Zinc in Brass; Calibration of pipettes, flasks, and burettes; preparation of half-normal solutions of Hydrochloric acid and Sodium Hydroxide; determination of Alkaline strength of Soda Ash; determination of acid strength of Oxalic Acid; determination of Copper by Titration with Potassium Cyanide; and determination of Silver by the Thiocyanate process.

**Second Semester:**

Analysis of Coal; the determination of Phosphoric Anhydride in Apatite; analysis of Limestone; determination of

Silica in Silicates; determination of Iron in Limonite by bi-chromate process; determination of Iron in Limonite by permanganate process; determination of Antimony in Tin-nite; determination of available Chlorine in Bleaching Powder.

### **Electro Chemistry:**

#### **Purpose:**

The object of the work is to become acquainted with elementary electro-chemical theories, with special reference to electro-chemical measurements and experimental investigation; to study the industrial electro-chemical processes and the methods used in investigating electric decomposition.

#### **Methods:**

The work is largely experimental, supplemented by class discussions and recitations.

#### **Scope:**

##### **First Semester:**

The class-room work includes two single periods per week for twenty weeks and laboratory work three double periods per week for twenty weeks.

In the class-room the following topics are considered: The electron theory; the electron theory as applied to conductors of the first class; its application to electrolytic conduction; the dissociation theory and evidences in support of the same; absolute and relative velocity of ions; conductivity of electrolytes and methods of measurement of the same; Faradays law and its applications; theory of the primary cell; solution tension; the normal electrode and its uses; methods of measuring potential difference between metals and their salts and the e.m.f. of various cells; decomposition and polarization; voltages and measurement of the same; theory of the secondary cell; study of conditions in secondary cell; construction of same; study of charge and discharge curves, care of storage cells; storage cell calculations.

The laboratory experiments include the following: The principle of Soret; the lowering of the freezing point of solvents; the elevation of the boiling point of solvents; the neutralization of acids and bases; experiments in electrolytic induction; measurement of absolute velocity of hydrogen and hydroxyl ions; Hittorf's transference numbers; measurement of conductivity of electrolytes; temperature coefficient of electrolytes; dissociation constant of electrolytes; copper and

silver voltameter and determination of atomic weight of copper; measurement of e.m.f. of standard cadmium cell using absolute electrometer; measurement of e.m.f. of Daniel cells by use of normal electrode; decomposition and polarization voltages of normal sulphuric acid, normal caustic soda, acid and neutral half-normal copper sulphate and fused sodium nitrate, using smooth and platinized electrodes; experiments on operation of lead and Edison storage cells.

**Electro Chemistry:****Scope:****Second Semester:**

In the class-room the following topics are considered: Energy required in electrolysis and calculation of same; separation of metals through adjustment of electrode tension; important conditions to be noted in electro-chemical operations; tabulation of data; influence of current density of oxidation and reduction; review work on electrical units; electrical computations; study of electrical measuring apparatus; sources of current and methods of current regulation; electrolytic production of caustic soda and chlorine from common salt; electrolytic processes for producing various pigments; preparation of potassium chlorate from potassium chloride; preparation of sulphur trioxide; production of ozone; production of nitric acid from the atmosphere; isolation of the metals sodium and potassium; isolation of the metal aluminum; the electrical furnace and furnace products; preparation of organic compounds; electrolytic mining of metals; electrolytic refining of metals; electroplating; electrotyping.

The laboratory experiments include the following: Quantitative analysis of a solution containing copper and silver by electrolytic separation; preparation of caustic soda and chlorine from common salt; electrolytic production of white lead; electrolytic production of Cadmium yellow, electrolytic production of mercury vermilion; electrolytic preparation of potassium chlorate from potassium chloride; electrolytic preparation of sulphur trioxide; electrical production of ozone; production of Nitric Acid from the atmosphere; Castner Process of separating sodium from Caustic Soda; Hall's experimental process for isolating aluminum; manufacture of Calcium carbide and carborundum; electrolysis of Sodium Acetate; electrolytic production of sodoform; synthesis of acetylene; experimental run on refining of Anode copper, nickel plating; silver plating; experiment showing principle of electrotyping.

**Assaying:****Purpose:**

To give the student sufficient training to enable him to do private assaying or act as an assayer at a mine or smelter.

**Methods:**

The course is largely laboratory work, practice being given in sorting, crushing, pulverizing ores, sampling, preparation of the assay charge, fire assaying, volumetric analysis, and gravimetric analysis.

**Scope:****First Semester:**

Fire assays of different kinds of gold and silver ores; fire assay of lead ores; volumetric assays of copper by the cyanide process, and by the iodide process; volumetric assays of iron by permanganate and bichromate processes; volumetric assay of zinc.

**Second Semester:**

Further practice with gold, silver and copper ores; assay of tin, nickel, cobalt, chromium, tungsten, antimony, manganese, etc.

**Third Semester:**

Cyaniding. A study of the ores for cyanide processes; the chemistry of cyaniding; the testing of ores; the precipitation of gold from cyanide solution; the treatment of concentrates and slimes; the application of electricity to cyaniding.

**Organic Chemistry:****Purpose:**

To introduce the student to the chemistry of the carbon compounds and thus lay a foundation for an analysis of foods, oils and other articles of economic interest.

**Method:**

Four hours' laboratory practice per week and two hours' recitations and lectures; given in the thirteenth or fourteenth year.

**Scope:****First Half Year:**

A study of the aliphatic series: The monatomic compounds, fractional distillation and the preparation of abso-

lute alcohol, hydro-carbons, halogen compounds, monatomic alcohols and ether, aldehydes and ketones, monabasic fatty acids, derivatives of fatty acids, sulphur compounds, compounds containing nitrogen; the polyatomic compounds; halogen compounds, polyatomic alcohols and diketones, dibasic acids, cyanogen and related compounds, urea, and ureids; polyatomic compounds with mixed functions, carbohydrates, amino acids and colloids.

**Second Half Year:**

The aromatic series: Carbocyclic compounds, benzene hydro-carbons, nitrobenzene and some of its reduction products, diazonium salts and diazo compounds, agodyes, phenols, aldehydes and ketones, aromatic acids, naphthalene and anthracene, derivatives of this division; heterocyclic compounds, emthyl-phenylpyrazolen, indigo, pyridine quinoline, and metallo-organic compounds.

**Elementary Domestic Chemistry:**

This course in Chemistry is designed especially for girls and its purpose is to train them to be intelligent home-makers:

A general outline of the work by semesters follows:

**B9:**

Inorganic chemistry.  
Physical and chemical changes.  
The atmosphere.  
Water.  
Fuels and illuminants.  
The nature of common substances.

**A9:**

Simple organic chemistry.  
Foods and food values.  
Food adulterations.  
Soaps.  
Clothing—care of textiles.

The time given for laboratory and class work is seven forty-five minute periods per week. This includes at least one double laboratory period each week.

**Elementary Science (Physics and Chemistry):****Purpose:**

It is the purpose of the course to give the pupil a general bird's-eye view of the sciences under consideration, especially in the world outside the school-room.



Pupils stopping with this course will leave school knowing something of the fundamental principles of these two most important sciences.

The course is above all a study of things as they exist and not of facts, as stated in books.

One of the first aims of the course is to create within the pupil a strong desire to know more of the world of science.

**Method:**

The time devoted to the course is divided between Physics and Chemistry, the Physics preceding the Chemistry and covering rather more than half the year.

A limited number of rather simple physical and chemical experiments, mainly of a qualitative nature, are performed by each pupil in the laboratory and encouragement is given to perform other experiments at home. Lecture-table demonstration experiments, liberally supplemented by lantern slides and other projection apparatus, constitute an important part of this course. Notes are taken by the pupils on such experiments and carefully written up for the next recitation.

Mathematics, so far as possible, is eliminated from the course, and any quantitative experiments attempted, either on the lecture-table or in the laboratory, are of the simplest nature. The common sense of the pupil is appealed to in every possible way. Special attention is paid to the practical aspects of both subjects, as shown by every day applications in the household, shop, factory, and world at large, so the pupil will have no difficulty in recognizing the important part these sciences have played in the development of modern civilization.

**Scope:****First Semester:**

**Light:** Shadows; nature of light; reflection; refraction; optical instruments; the eye; its defects and how remedied; color phenomena.

**Sound:** Character of sound; pitch; quality; loudness; musical instruments.

**Heat:** Temperature and scales for its measurement; kinetic theory; methods of transferring heat; hygrometry; evaporation; artificial ice, and refrigeration; steam engine; gasoline engine.

**Magnetism and Electricity:** Magnetism and permanent magnets; primary cells; storage cell; electro-magnet, and its

application to bell, telegraph and telephones; measuring instruments; motor; dynamo; electric lighting; relative efficiency of different lights; wireless telegraph; "X" Rays; radio-activity.

**Second Semester:**

**Mechanics:** Motion; force; machines and work; pressure in liquids; pressure in gases; molecular motions and forces.

**Elementary Chemistry:** Matter and energy; oxygen and its relation to combustion; air; hydrogen; water; acids, bases and salts; chemical theories and laws; brief study of important metals and their compounds; carbon and its compounds briefly considered; cleansing; bleaching; dyeing; fermentation; simple tests of water and foods for impurities.

**Elementary Physics:****Purpose:**

The aim of this course is:

1. To instill a knowledge of the fundamental facts and principles of the physical world.
2. To apply the knowledge thus obtained to the solution of the problems of the practical world.
3. To develop the power of the individual in the application of reason to the results of experiment, to the end that truth may be determined.
4. To develop the moral nature of the individual by inculcating a high regard for truth, and cultivate accuracy of statement and simplicity in language.
5. To develop the intellectual powers of the mind, and add to the cultural life of the individual.

**Method:**

Induction methods are used. The classified results of laboratory experiments form the basis from which the general physical laws are developed. These laws are studied and applied to practical cases.

**Scope:**

The course deals with the fundamental phenomena that lie at the basis of all physical relations, emphasizing only such details as most readily lend themselves to the elucidation of underlying principles, and which are of the greatest practical importance. Twenty experiments are performed each half year and fully written. Two double laboratory periods and three recitation periods are allowed for the work.

**First Semester:**

Fundamental units of measurement; force and motion; gravitation; mechanics of liquids; mechanics of gases; molecular motions in gases; molecular motion in liquids; molecular motion in solids; molecular forces; thermometry; work and mechanical energy; work and heat energy; transference of heat.

**Second Semester:**

Magnetism; static electricity; electricity in motion; electrical chemical and heating effects; magnetic properties of coils; induced currents; dynamos and motors; sound; properties of musical sounds; light; formation of images; color phenomena; invisible radiations.

**General Physics:****Purpose:**

The first semester covers the requirements of the elementary physics course, and in addition aims to give a more extended and detailed knowledge of the facts of physics and its practical application.

**Method:**

Its methods in general are those of the elementary physics, but the experiments are all quantitative and greater accuracy in the results is required. It develops a deeper insight into the theory of the subject and applies the method of mathematics to a greater extent than in elementary physics. It embraces the whole physical field of matter and extends the investigations into its nature and constitution.

**Scope:****First Semester:**

Uniformly accelerated motion; composition and resolution of forces; the principle of work; energy and efficiency; laws of impact; coefficient of rigidity; moment of inertia; the law of Centrifugal Force; Boyle's Law; Density of Air; the law of Gay-Lussac; Origin of Atomic Hypothesis; the Kinetic Theory of liquids; Hygrometry; Archimedes' principle; Capillarity; Calorimetry; Expansion.

**Second Semester:**

Electricity, Sound and Light: Magnetic and electric fields of force; the determination of strengths of magnetic fields and poles; measurement of electric currents; measurement

of potential difference; measurement of resistance; temperature coefficient of resistance; specific resistance; constant of a moving coil galvanometer; the absolute measurement of capacity; the comparison of capacities; the determination of dielectric constants; and the ratio of the electro-static and electromagnetic units; electromotive force and internal resistance; the comparison of electro-motive forces; electro-magnetic induction; the constants of the earth's magnetic field; self-induction; electrolytic conduction; velocity of sound in air; the musical properties of air chambers; longitudinal vibrations of rods; diffraction of light and sound waves; the diffraction grating; the principle of the grating; the refraction of light; total reflection; law of illumination; dispersion spectra; polarized light; radio-activity.

### **Elementary Electricity (One Year):**

#### **Purpose:**

This subject is given in the ninth year of the electrical engineering course. The aim is to give a thorough training in physical processes, but as far as possible to confine the study to elementary electricity, in order to lay a thorough foundation for the rest of the course. It also purposes to give a very practical turn to the study and make the student familiar with electrical measuring instruments. Electricity is given first because it is believed that its problems are less difficult and they appeal more nearly to the interest of the entering pupil.

#### **Methods:**

The methods are those of elementary physics. Provision is made for the study of the elementary phenomena of the direct and alternating current, in a concrete and simple form, developing at the same time a practical elementary knowledge of the subject. The whole field is covered and the subject is brought down to date both in theory and practice. The time given to it enables the pupil to obtain a thorough knowledge of circuits, electrical devices, wiring, dynamos, motors, and electrical measuring instruments.

#### **Scope:**

##### **First Semester:**

General properties of matter, physical change, molecules, chemical change, atoms, electrons, the ether, mass, weight, density, states of matter, momentum, velocity, kinetic theory of matter, heat, energy, force, work, horse-power.

**Magnetism:** Natural magnets; artificial magnets; theory of magnetism; strength of magnetic fields; terrestrial magnetism.

**Electricity:** Voltaic cell; electrolysis; storage cells; definitions of units; Ohm's law; electro-magnetic induction; electric measuring instruments and their calibration.

**Second Semester:**

The alternating current and the alternator, the direct current and the generator, electrical appliances, electrical heating devices, the electric light, electric wiring, static electricity, the condenser discharge and electro-magnetic waves, wireless telegraphy and high frequency electricity.

**Elementary Physics (One Year).**

**Molecular Physics, Heat, Sound, and Light.**

**Purpose:**

This subject is given as a continuation of "One Year in Elementary Electricity," and is the second year of science in the electrical engineering course. The purpose of the course is essentially the same as that already stated for elementary physics.

**Method:**

The course covers the subject of physics minus electricity. It thus leaves more time to be devoted to the subjects enumerated in the title. The content is practically the same as that of the elementary physics, omitting electricity. Each subject is studied more in detail and greater attention is given to its practical application. A series of forty experiments are performed during the year. Notes are made at the time of performing the experiments and these are expanded and carefully written in the note-book.

**Scope:**

**First Semester:**

Mechanics and molecular physics.

**Second Semester:**

Heat, sound and light.

**Geology:**

**Purpose:**

The purpose of the study of Geology is to acquaint the student with the formation of the Earth and the process of its evolution.

**Methods:**

Recitations occupy five periods per week, accompanied by frequent field excursions to places of geological interest. Rocks, fossils, and topographic maps are studied.

**Scope:****First Semester:**

1. External geological agencies and their results; weather, ground, water, rivers and valleys, river deposits, glaciers, wind, the sea.
2. Internal geological agencies and their results; movements of the earth's crust, earthquakes, volcanoes, underground structures of igneous origin, metamorphism and mineral veins.

**Second Semester:**

1. Historical geology.
2. Economic geology; a study of petroleum with especial reference to the California fields, ore deposits, iron ores, copper, gold, silver, lead and zinc. Special attention is paid to western deposits.

**Third Semester:**

A study of the minor metals, coal, building stones, clay, lime and calcareous cements, salines, gypsum, fertilizers, abrasives, asbestos, graphite, precious stones, underground waters.

**Mineralogy:****Purpose:**

To give the student ability to recognize common rocks and minerals, especially those of economic and geological importance.

**Methods:**

The course consists of two periods of recitation per week and three periods of laboratory work. In the recitation the student is shown specimens of all the minerals studied and their characteristics are pointed out. In the laboratory, minerals are identified by physical properties and blowpipe analysis. Frequent field excursions are made.

**Scope:****First Semester:**

1. Introductory study of physical properties: Color, lustre, streak, hardness, specific gravity, crystallization, twinning, cleavage, fracture, tenacity, structure.
2. Study by groups of somewhat over one hundred minerals belonging to the following classes: Elements, haloids, sulphides and arsenide, oxides, manganites, aluminates, borates, carbonates, nitrates, phosphates, sulphates, molybdates, etc.

**Second Semester:**

Further study of some of the groups of first half year and a systematic study of the varieties of silica and the silicate groups. About one hundred mineral forms are studied.

**SOCIAL SCIENCES****History, Civics and Economics****Purpose:**

The Social Sciences, History, Civics and Economics are concerned pre-eminently with the formation of moral character both in the individual and the nation. The essence of these subjects is to be found in ethics and citizenship, with an application immediate and personal as well as future and social. Properly taught, they afford great opportunity for developing judgment, discrimination, charity, sympathy and appreciation.

**Method:**

In addition to the oral and written exercises, the study of text and reference books, the making of maps and outlines, the widest use is made of pictures, museums, factories, stores and industrial exhibits, as well as the various student activities which illustrate or exemplify historical, economic or civic facts and events.

**A7:****American History:**

In this term's work topics are developed bearing upon the exploration and settlement of North America, the growth of the colonies, the struggle between England and France, the causes of the Revolutionary War and the organization of the New Government 1789.

**B8:****American History and Civics:**

The work of this grade covers the History from 1789 to 1865, the close of the Civil War, with brief reference to the civic topics. The main topics discussed are the industrial and social development of the Middle West, the expansion of territory with special emphasis placed on the admission of California and the results of the Mexican War, the slavery question and the Civil War.

**A8:**

The period since the Civil War is developed and the larger part of the half year is spent in the study of Civics, including the social and industrial problems as outlined in the State Series Civics text.

**B9:****Ancient History:**

Ancient History is introduced by a brief survey of the earlier civilizations, followed by the story of the Greeks to the Persian wars, when a more detailed study is made of the Eastern nations. The rest of the term is devoted to the great and virile periods of the leading Greek cities; emphasizing art through pictures, literature through well chosen selections and Greek ideals through biography and story.

**A9:**

The political and economic development of the Roman republic is followed by a study of the Roman empire in Italy and in the provinces. Emphasis is laid on the struggles of the common people, government and administration, great public works, territorial expansion, evil effects of war, rise of Christianity, barbarian invasions, fusion of Roman and Teuton, Mohammedanism and the Empire of Charlemagne.

**B10, A10:****European History:**

European History in the first term covers the period from the Empire of Charlemagne to the time of Louis XIV. Emphasis is laid on the feudal institutions, the Church and its influence, commerce and the towns, the rise of nations, the Renaissance and the Protestant revolution.



The age of Louis XIV is followed by a study of the enlightened despots, the industrial revolution, the constructive work of the French Revolution and Napoleon, the making of modern Italy and Germany, and the expansion of Europe into Asia and Africa. Emphasis is laid on the industrial and social changes, growth of nationality and democracy, and the world movements of today.

**10-11:****English History:**

English History is chosen for more detailed study because of its close relation to American literature, institutions and history. The work includes a special study of Ireland, Scotland and the British Colonies. It emphasizes the development of the Church and of parliament, mediaeval life, commercial expansion, industrial revolution, political reform, and present-day government.

**B11, A11:****American History:**

American History is taught with the purpose of putting the students in sympathy with what is distinctively American in their environment and inherited ideals, and also to make them thoroughly appreciative of the European backgrounds. Special emphasis is laid on the English colonial policy, the critical period, rise of nationality, westward expansion and effect, period of emotional politics (1846-1870), of economic politics (since 1870), and the present international relations and status of the United States.

**B12, A12:****Civics and Economics:**

Civics gives an understanding not only of the political functions of government but also its relation to the general welfare of society. It notes the tendency towards democracy in some things and administrative control in others; towards centralization in some things and local government in others; and calls attention to the awakening of the social conscience. Emphasis is laid first on the political and social problems of the city leading to the broader state and national questions, and including immigration, conservation of natural resources, public control of utilities, integrity of public servants, charity, correction, and the prevention of poverty and crime.

Economics aims to put the student in touch with the problems of the day. Only enough theory is insisted upon to make the questions at issue understood. The banking problem, the tariff problem, the railroad question, monopolies, trade unions, socialism and prices are carefully and thoroughly studied. But the course in Economics aims at more than a material preparation for law and business. It is the purpose of this work to endow the student with a richer spirit for citizenship and a nobler sympathy for the struggles of humanity. Consequently this course is more than text-book work; it emphasizes special papers and reports, and furnishes opportunities to visit local industries, thus bringing the student in direct contact with the application of his theory.

**Commercial Geography (One-half Year):**

Commercial Geography treats of the geographic conditions affecting trade routes, trade centers, and commercial products, with the object of pointing out, in a suggestive manner, man's economic dependence upon natural phenomena, and the interdependence of the different parts of the civilized world. Much attention is paid to the study of resources, processes of production and the movement of commerce. This includes an investigation of the local situation.

**B12, A12:****Rural Law and Economics:**

The aim of this course is to familiarize the student with the written and unwritten laws pertaining to rural life, and to give him an insight into the laws of California pertaining to land titles, water rights, leases, liens, notes, mortgages, property rights, banking, carrier's liability, taxation, and laws governing such questions as roads, fences, and labor.

Under Economics are considered some of the fundamental truths underlying industrial, political, and social problems in their historical and present-day relations; such matters as land values, rent taxation, the application of the law of supply and demand to the production and marketing of produce; co-operative marketing and buying vs. other methods, the farmer and the railroads; location and climate in their relation to production and distribution, and the farmer and the community.

# Polytechnic Evening High School

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SEPTEMBER 16, 1912

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W. A. DUNN, Principal  
A. N. HATHERELL, Vice-Principal

Polytechnic High School Building  
Cor. Washington and Hope Streets

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## POLYTECHNIC EVENING HIGH SCHOOL

The Polytechnic Evening High School opens September 16, 1912, at 7 p.m., in the building of the Polytechnic High School, corner of Washington and Hope Sts. It is open to all over 15 years of age who have completed the elementary school course, or who by virtue of experience or maturity are capable of doing the work. In Chemistry a deposit of \$2.00 is required of all students, to be refunded at the close of the term minus charges for breakage. The hours are 6:10 to 9:15 p. m., divided into four periods. The classes in English, Mathematics, Languages, and Commercial work are all one-period classes, but registration for less than two periods cannot be made in Drawing or Applied Art classes. In Shop and Laboratory classes the best results are obtained by devoting the whole evening to one subject.

In general, it is recommended that students register for two or three evenings per week, using the other nights for study or recreation, but where the nature of the subjects or the employment of the student during the day warrants, many register for four or five nights per week and get excellent results. Registration for one period only is not accepted; furthermore, all students must be registered in some third period class, as it is from the roll of that period that the school's attendance record is made.

Credits for work completed in the Polytechnic Evening High School are accepted by the other High Schools of the city. The school will also recommend such students as merit recommendation to the commercial world, if desired. The subjects treated and the methods of teaching are selected with especial reference to their immediate practical value. All classes are maintained only as long as the attendance justifies; classes in which the attendance is low being discontinued.

Students are urged to enroll on the opening night, and thus get the full benefit of the term's work. Work in other subjects will be offered as soon as the demand is sufficient to warrant forming classes, and students are requested to co-operate with the office in making their wants known.

A. N. HATHERELL, Vice-Principal.

#### Bell Schedule.

Period I.		Period III.	
Warning .....	6:10	Tardy .....	7:45
Tardy .....	6:15	Warning .....	8:29
Warning .....	6:53	Passing .....	8:31
Passing .....	6:55		
Period II.		Period IV.	
Tardy .....	7:00	Tardy .....	8:34
Warning .....	7:40	Warning .....	9:14
Passing .....	7:42	Passing .....	9:15

#### Numbering of Rooms.

The hundreds' digit in the room number shows the floor, thus all rooms between 200 and 300 are on the second floors of the various buildings. The tens' digit shows the building in which the room is located, thus all rooms from 1 to 20 are in the main building, from 21 to 40 in the Shops, from 41 to 60 in the Science Building, and from 61 to 80 in the Art Building. Example: Room 368 would be on the third floor of the Art Building.

Lunch will be served in the school cafeteria for the accommodation of those who do not return to their homes between the time of leaving work and coming to night school.

## Courses of Study

### ENGLISH DEPARTMENT.

**Reading and Spelling, B9**—The use of Norton's advanced "Hearts of Oak" book as text, with intelligence, spirit, enthusiasm, interest, and appreciation as objects sought; drill in clear enunciation, proper pronunciation, correct inflection, and natural expression; incidental study of English literature from many notable examples of best representative authors.

**Composition, B9**—Practice and training in the use of language; original production for self-expression; study of the paragraph, correction of common errors. The aim is to secure ease, clearness, and correctness in writing and speaking.

**Grammar and Spelling, A9**—A practical course for persons who have never had, or who need to review, the fundamentals of English grammar. Understanding of sentence structure and correctness of expression rather than theorizing are the objects sought. In spelling, thorough preparation and written recitation on lists of words, drill in use of words in sentences, grammar and spelling exercises are combined with vocabulary work.

**Composition, B10**—A course similar to ninth year Composition in aim and method is offered, but involving greater emphasis upon the artistic side of expression, study of models, imitation, original productions, reports, discussions, and debates.

**Commercial English, B10**—A supplemental course in English directed along business lines. It includes drawing business papers, technical business language, commercial correspondence, interpretation of business and legal documents, etc.

**Literature, B10**—The awakening and fostering of a love for good reading, rather than critical analysis, is the aim; to read with accuracy, discrimination, and appreciation, to know something of the principal forces in the development of our literature and to learn something of the lives and influences of our greatest authors are the definite objects.

**Literature, B11**—Study of some of the more significant literary forces of the nineteenth century and of our own day,

with a view to bringing out the relation of literature to modern life. Lectures, readings, reports, and discussions.

### HISTORY DEPARTMENT.

**United States History and Civics**—A constructive and developing study of American History, local and national government, municipal charters, government ownership and control.

**Economics and Citizenship**—This course will include a general history of economic development in the United States and the study of such questions as banks and banking, values, principles of taxation, including tariff, monopolies, high cost of living, transportation, demand and supply, immigration, housing conditions, hospitals, reform institutions, etc.

### MATHEMATICS DEPARTMENT.

**General Arithmetic**—Review of fundamental operations, common and decimal fractions, percentage, mensuration. This work will be given with a special reference to the trades.

**Algebra, B9**—The fundamental operations and standard methods of factoring, with the application of these to common factors and multiples, simple equations and solution of equations by factoring, operations in fractions. Text: "First Course in Algebra," by Hawkes, Luby, Touton.

**Algebra, A9**—Fractional and simultaneous equations, involution, evolution, theory of exponents, radicals and quadratics, solution of equations by graphs. Same text as above.

**Geometry, B10**—A study of rectilinear figures and the circle with applications to practical problems. Text: Wentworth's Geometry, revised by Wentworth and Smith.

**Trigonometry and Computation**—Plane Trigonometry, logarithms and their applications, interpretation and application of formulae. Attention given to outside problems involving trigonometric applications.

**Surveying**—A course will be offered in the theory of surveying. This work is intended primarily for those engaged in field work during the day, but open to all interested in the problems of the surveyor. Attention will be given to traverse problems, profiles, contours, areas by co-ordinates, by latitudes and departures, stadia formulae, map drawing, and possibly freehand lettering.

Opportunity will be given to do astronomical work for the purpose of meridian and latitude.

**LANGUAGE DEPARTMENT.**

**Spanish, B9**—Our work in Spanish is planned to meet the needs of those who wish to use the language in dealing with the Spanish speaking population of the Southwest. B9 students will be taught to speak correctly rather than much, and the course will be adapted to those who have but little time for outside preparation.

**Spanish, A9**—This course follows the same general plan as B9. There will be more conversation and less grammar. More outside work will be needed to complete the course successfully.

**Spanish, B10**—In this course there will be the maximum of practice with the minimum of theory. It is hoped to eliminate English entirely from the class room. Those who wish to enroll but do not feel sure of their grammar might take B9 or A9 at the same time.

**French**—A semi-conversational method will be used. Students will be taught to speak correctly rather than much. Hence, there will be slow and careful drill in pronunciation and grammar. This course will be given by a specialist whose French was acquired in Paris.

**German, B9**—This course will offer a careful drill in the difficulties of German grammar. The student who follows it faithfully will be well prepared for the second year work in any school.

**German, B10**—A course for those who wish to speak German. Students desiring this course but not feeling sure of their grammar might enroll also for B9 German.

**COMMERCIAL DEPARTMENT.**

**Introductory Bookkeeping, B9 and A9**—Principles of debit and credit, the Account, Journalizing, Cash Book, Sales Book, Invoice Book, Statements, Commission, Single and Double Entry, use of vouchers, Statements of Resources and Liabilities, etc. Divided into two classes, B9 and A9. Text: Weber's Introductory Bookkeeping.

**Accounting, B10**—Partnership adjustments, corporation accounting, stock transactions, financial statements, voucher system, cash accounting, principles of banking, auditing, etc. Open to students who have had Introductory Bookkeeping, or its equivalent in experience or training.

**Teachers' Course in Bookkeeping**—All the fundamental principles studied and discussed; ledger closing and financial statements emphasized; special sets worked; commission, corporation, manufacturing, banking, and business practice. Text: Compared with other standard systems.

**Stenography, B9 and A9**—The sounds of speech and the alphabet; combining the characters to make the syllable; accent; abbreviating the syllable; how to abbreviate and why; what words to abbreviate; simple reading and writing exercises, graded; simple stories for practice in reading and writing. Divided into two classes, B9 and A9. Text: Wagner Phonography.

**Stenography, Dictation, B10**—The polysyllable; reading and writing exercises continued; simple progressive dictation exercises consisting of business letters, legal and literary matter, beginning at fifty words per minute and increasing to one hundred. Open to students of all systems.

**Stenography, Special Advanced Speed Practice, A10**—Speed beginning at one hundred words per minute and increasing. Dictation matter, business letter, literary and legal. Open to all systems of shorthand.

**Typewriting, Touch System**—Students beginning typewriting are taught care of and how to operate machines. Writing from plain copy. Good work is insisted upon at all times. All lessons executed on the typewriter are submitted to the teachers for examination, criticism, and suggestions for improvement. All work carefully graded. Standard machines used. Touch method of typewriting is emphasized throughout the course.

**Typewriting, Advanced**—Speed work from dictation, rapid copying, legal forms and specifications, machine mechanism, etc.

**Business Practice**—The work embraces several different offices, each being equipped with a complete set of books, blanks, business papers, etc., peculiar to the business conducted in the office. Work in tabulating, carbon duplicating, letter press copying, addressing envelopes, and dictation to machines will be given. Burroughs' Adding Machine, Rotary Neostyle, and Edison Business Phonograph may also be used in connection with the office work.

**Penmanship**—The Zaner method of arm movement writing is taught. The forms are simple and graceful. The aim



is to form a good strong business handwriting, to develop speed, and secure legibility based upon right principles.

**Penmanship, Teachers' Course**—Zaner method of arm movement continued. This work is planned to assist teachers and advanced students in presenting the subject both at the blackboard and the desk. The course covers a year's work from the first through the high school grades.

**Commercial Arithmetic, B9**—Common and decimal fractions, measurements, percentage as applied to profit and loss, commission, commercial discount and insurance, simple interest, short cuts in the solution of business transactions. Text: Moore and Miner's Commercial Arithmetic.

**Commercial Arithmetic, A9**—Bank discount, partial payment, compound interest, cash balance, partnerships, stocks and bonds, business statements. Text: Same as above.

**Commercial Law**—Every day business law for all who occupy any office position, including contracts, sales, partnership, corporations and agency. Text: Gano's Commercial Law.

**Commercial English**—See English Department.

### CHEMISTRY DEPARTMENT.

**Elementary Chemistry**—Recitations and laboratory exercises covering the metallic and non-metallic elements with particular reference to their commercial compounds. Text: McPherson & Henderson's Descriptive Chemistry. Breakage fee, \$2.

**Qualitative Analysis**—Chiefly laboratory exercises for the determination of the constituents of the various groups, with supplementary exercises in unknowns. Laboratory fee for breakage, \$2.

**Assaying**—Principally laboratory exercises in standard methods used in wet and fire assays on the more important mineral ores. Preparation required, one-half year of Qualitative Analysis. Laboratory fee, \$2.

### ELECTRICAL ENGINEERING DEPARTMENT.

**Physics and Electricity**—Open to all students of the school; class and individual laboratory work. The first term includes mechanics, hydraulics, pneumatics, and heat as applied to steam generators and heating systems.

The second term—magnetism, electricity, sound and light.  
Text: Milliken and Gale.

**Electrical Engineering**—Open to all students who have had Physics and Electricity or practical experience.

**Direct Current**—Its theory and practice with laboratory experiments; dynamo design and house wiring.

**Alternating Current**—Theory and practice, alternator and transformer designs, alternating current phenomena with experiments.

### ART DEPARTMENT.

**Freehand Drawing**—Pencil sketching in light and shade from still life groups; charcoal from cast and pose; crayon and pen and ink work from objects.

**Metal and Leather**—Theory and practice of design; application of stencil, leather, and metal designs, making of cut, tooled, and stained leather mats, book-covers, and pocket books; pierced, etched, or hammered copper and brass work in form of trays, bowls, and lamps. Art nouveau jewelry.

**Pottery, beginning**—Preparation of clays for tile and pottery. Making of tiles with etched and incised designs. Building of bowls, covered jars, vases; decorating these with modeled low relief designs. The aim will be to create objects of simple beauty, consistent in design and color.

**Pottery, advanced**—Continued study of clays, building of panels, mantel tiles; slip decorated and carved designs. Making of pottery forms continued by hand and out of moulds; making of glazes, both matt and transparent, and applying same to tiles and pottery by dipping, painting, etc. Loading of kiln, burning of both biscuit and glazed ware.

### DRAFTING DEPARTMENT.

**Mechanical Drafting**—Care and use of instruments; geometrical drawings; letterings, freehand and mechanical; sections, intersections, developments, etc.; pattern drafting, machine details, gearing, and machine design, working drawings, reading of blue prints.

Students may register for as many nights as they desire, but all are advised to take at least one class in mathematics.

**Architectural Drafting**—This course will be divided into the following classes: 1. Beginners (open to those who have

had at least six months of Mechanical Drawing). 2. Advanced (open to those who have had some experience or at least one year of architectural drafting in a technical school). 3. Structural designing, steel and reinforced concrete (open only to those who have had sufficient office or technical experience). 4. Perspective, theory, pen and pencil, color. The special hours and nights of meeting the different sections will be announced.

### MECHANIC ARTS DEPARTMENT.

**Woodshop**—Joinery, exercises in the accurate making of joints. Cabinet-making: Construction of furniture, the student furnishing the material and retaining the product. Turning: The essential principles of wood-turning applied to practical pieces adapted to lathe work. Open to men and women alike.

**Machine Shop**—Beginning with elementary bench work; as, chipping, filing, polishing. Use of the surface gauge square and dividers in laying off. Drilling, tapping, and reaming holes; scraping surfaces. Lathe, planer, shaper, miller, and grinder work, and calculations involved in their operation. Students with sufficient previous experience may select special work, others will be advanced according to ability shown. Students may register for two or three nights only.

**Automobile Engineering**—This course is designed chiefly to give practical instruction in automobile work from the engineering, rather than the operative standpoint. Talks on thermodynamics and principles of construction of internal combustion motors, as applied to automobiles, will be given during the year. The mechanical principles of modern motor car mechanisms will be discussed, and their adjustment practically demonstrated by taking apart and assembling. For this purpose, a complete chassis with various types of new and old parts will be provided, thus affording opportunity for observation on the effects of wear and its compensation. The work will be carried on in the engineering laboratory of the school where ample facilities are provided for making power and efficiency tests.

### DOMESTIC ARTS DEPARTMENT.

**Millinery**—Making of wire and buckram frames, covering of same. The making of bows, rosettes and flowers of ribbon to be used in trimming. Renovating or renewing of old ma-

terials. Students may register for one, two, or three nights per week unless classes become crowded.

**Dressmaking**—First term: Drafting of patterns of gored skirt, shirt waist, sleeves, etc.; making tailored shirt waists, button-holes, gored skirt. Instruction in the different seams used in cotton garments. Second term: Drafting of plaited and circular skirt. Making of skirts to wear with shirt waist. Making of dress. Hand-made trimmings for costumes, waists and underwear. Students may register for one or two nights per week unless classes become crowded.

**Cooking**—A course in practical cooking and serving for housekeepers. Classification of foods and their uses in the body. The effect of temperature on each principle is determined and then applied in the preparation of such foods as meat, fish, vegetables. Combination of different foods. Students may register for one or two nights per week unless classes become crowded.

### NOTICES.

All students who desire to register for less than three periods of work in any evening must have their programs signed by the vice-principal.

The library on the fourth floor of the main building is open Monday, Wednesday, and Friday nights from 6:30 to 9:15. Students and their friends are urged to make use of it.



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# COURSE OF STUDY

## Wilmington Intermediate and High School—1912-1913

	Commercial	Literary	Scientific
<b>B7</b>	1 Language, Spelling ....2 2 Reading, Literature....3 3 Geography .....4 4 Colonial History .....3 5 Arithmetic .....5 6 Stenography and Type-writing .....5 7 Spanish or German....5	1 Language, Spelling....2 2 Reading, Literature....3 3 Geography .....4 4 Colonial History .....3 5 Arithmetic .....5 6 Spanish or German....5	1 Language, Spelling.....2 2 Reading, Literature....3 3 Geography .....4 4 Colonial History .....3 5 Arithmetic .....5 6 Spanish or German....5
<b>A7</b>	Same as B7	Same as B7	Same as B7
<b>B8</b>	1 Language, Spelling ....2 2 Reading, Literature....3 3 U. S. History & Civics..5 4 Commercial Arithmetic..5 5 Stenography and Type-writing .....5 6 Spanish or German....5	1 Language, Spelling ....2 2 Reading, Literature....3 3 U. S. History & Civics..5 4 Commercial Arithmetic..5 5 Oral English .....5 6 Spanish or German....5	1 Language, Spelling ....2 2 Reading, Literature....3 3 U. S. History & Civics..5 4 Commercial Arithmetic..5 5 Oral English .....5 6 Spanish or German....5
<b>A8</b>	Same as B8	Same as B8	Same as B8
<b>B9</b>	1 English .....5 2 Commercial Arithmetic..5 3 Spanish or German .....5 4 Physiography or Greek History .....5 5 Stenography and Type-writing .....2 6 Manual Training or Domestic Science .....2	1 English .....5 2 Algebra .....5 3 Spanish or German .....5 4 Greek History .....5 5 Free Hand Drawing....2 6 Manual Training or Domestic Science .....2	1 English .....5 2 Algebra .....5 3 Spanish or German .....5 4 Physiography .....5 5 Free Hand Drawing....2 6 Manual Training or Domestic Science .....2
<b>A9</b>	Same as B9 Except Roman in Place of Greek History	Same as B9 Except Roman in Place of Greek History	Same as B9
<b>B10</b>	1 English .....5 2 Spanish or German .....5 3 History or Botany.....5 4 Bookkeeping .....5 5 Stenography and Type-writing .....2 6 *Manual Training or Domestic Science .....2	1 English .....5 2 Spanish or German .....5 3 Med. & Mod. History..5 4 Geometry .....5 5 Mechanical or Architectural Drawing .....2 6 *Manual Training or Domestic Science .....2	1 English .....5 2 Spanish or German .....5 3 Botany .....5 4 Geometry .....5 5 Mechanical or Architectural Drawing .....2 6 *Manual Training or Domestic Science .....2 7 Chemistry .....2
<b>A10</b>	Same as B10 Except Zoology in Place of Botany	Same as B10	Same as B10 Except Zoology in Place of Botany
<b>B11</b>	1 English .....5 2 Commercial Law .....2 3 Spanish or German .....5 4 U. S. History & Civics..5 5 Stenography and Type-writing .....2 6 Manual Training or Domestic Science .....2	1 English .....5 2 Solid Geometry .....5 3 Spanish or German .....5 4 U. S. History & Civics..5 5 Drawing and Painting..2 6 *Manual Training or Domestic Science .....2	1 English .....5 2 Physics .....5 3 Spanish or German .....5 4 U. S. History & Civics..5 5 Solid Geometry & Trigonometry .....5 6 Mechanical or Architectural Drawing .....2 7 *Manual Training or Domestic Science .....2
<b>A11</b>	Same as B11	Same as B11	Same as B11

\*Electives.

NOTES—Periods in the Seventh and Eighth grades are 30 minutes' long.

Manual Training, Domestic Science and Penmanship are required in the Seventh and Eighth grades.

Music, Drawing and Hygiene in the Seventh and Eighth grades follow the Course of Study of the Elementary Department.







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